

**DODD-FRANK FIVE YEARS LATER:
WHAT HAVE WE LEARNED FROM
CONFLICT MINERALS REPORTING?**

HEARING
BEFORE THE
SUBCOMMITTEE ON MONETARY
POLICY AND TRADE
OF THE
COMMITTEE ON FINANCIAL SERVICES
U.S. HOUSE OF REPRESENTATIVES
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DODD-FRANK FIVE YEARS LATER: WHAT HAVE WE LEARNED FROM CONFLICT MINERALS REPORTING?

Tuesday, November 17, 2015

U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MONETARY
POLICY AND TRADE,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:07 a.m., in room 2128, Rayburn House Office Building, Hon. Bill Huizenga [chairman of the subcommittee] presiding.

Members present: Representatives Huizenga, Mulvaney, Lucas, Pearce, Westmoreland, Pittenger, Messer, Schweikert, Guinta, Love, Emmer; Moore, Foster, Himes, Murphy, Kildee, and Heck.

Ex officio present: Representatives Hensarling and Waters.

Also present: Representative Sherman.

Chairman HUIZENGA. The Subcommittee on Monetary Policy and Trade will come to order. And without objection, the Chair is authorized to declare a recess of the subcommittee at any time.

Today's hearing is entitled, "Dodd-Frank Five Years Later: What Have we Learned from Conflict Minerals Reporting?"

I now recognize myself for 5 minutes to give an opening statement.

Five years ago, the passage of the Dodd-Frank Act created Section 1502, requiring public companies to disclose whether they source "conflict minerals"—tin, tungsten, tantalum, and gold—from the Democratic Republic of the Congo (DRC) and its nine neighboring countries. These minerals have been used in a variety of products, including cell phones, cosmetics, footwear, apparel, and even auto supplies. Many auto suppliers are located in my area in western Michigan. Needless to say, every single one of us has someone impacted by this very provision in our various congressional districts.

I would also like to note that was a provision that was put into Dodd-Frank which had no hearings in the House or in the Senate; it was a provision that was inserted at conference and never had a full airing. And that is something that I am determined to do now.

Well, 5 years later, I am very concerned that this well-intentioned conflict minerals rule is actually harming the very people it was intended to help. In a November 2014 article, the Washington Post reported that the conflict minerals rule, while well-inten-

tioned, “set off a chain of events that has propelled millions of Congolese miners and their families deeper into poverty,” with many miners “forced to find other ways to survive, including by joining armed groups.”

Writing in *Foreign Policy* magazine, Lauren Wolfe observed that, “Perhaps it is time to face the fact that the regulatory law now in place has done little to improve the lives of some of the poorest people on Earth, and for many it may have made an already dismal reality grimmer.”

Now, we see that the Securities and Exchange Commission has promulgated rules for public companies to disclose their use of these minerals and issued its disclosure rule in August of 2012. Under the rule, companies that use conflict minerals must undertake a reasonable country-of-origin inquiry (RCOI) to assess whether these minerals have originated from the 10 covered countries in Africa. Companies filed disclosures for the first time in response to the rule in 2014 on minerals used in the calendar year of 2013.

Additionally, in April of 2014 a panel of the U.S. Court of Appeals for the D.C. Circuit ruled that requiring companies to describe the conflict-free status of their products violated their First Amendment rights. This decision was upheld by the same three-judge panel in August of this year, of 2015.

As we all know, the SEC has little or no experience in crafting trade sanctions or articulating and enforcing human rights policy, two areas which have not traditionally been within the purview of securities regulation. SEC Chair Mary Jo White has also questioned the SEC’s ability to promulgate rules governing the African minerals trade and whether SEC disclosure powers are best used to meet and address societal ills.

In fact, in an October of 2013 speech, Chair White stated that, “Other mandates which invoke the Commission’s mandatory disclosure powers seem more directed at exerting society pressure on companies to change behavior rather than to disclose financial information that primarily informs investment decisions. That is not to say that the goals of such mandates are not laudable. Indeed, most are.

“Seeking to improve safety in mines for workers or to end horrible human rights atrocities in the DRC are compelling objectives, which, as a citizen, I wholeheartedly share. But as Chair of the SEC, I must question as a policy matter using the Federal securities laws and the SEC’s power of mandatory disclosure to accomplish these goals.”

And I can’t emphasize enough that I personally agree with Chair White. We have laudable goals. Unfortunately, this is the wrong vehicle.

In light of the President’s 2016 budget request of \$1.722 billion for the SEC, I, along with Chairman Hensarling, Chairman Royce of the Foreign Affairs Committee, and Subcommittee Chairman Garrett, sent Chair White a letter asking for a detailed description of the funds and hours expended to the date on the SEC’s conflict mineral disclosure rule.

In the SEC response letter from July of 2010—in the letter they tracked it from July of 2010 to March 16th of 2015. The SEC spent over 21,000 man and woman hours and approximately \$2.7 million

on this particular provision, with which the SEC has little to no experience.

From my perspective, I don't believe that the SEC and the Federal securities laws should be used to help counter human rights abuses or further altruistic causes, no matter how important that they may be.

Dodd-Frank is full of unintended consequences. Today, we have the opportunity to hear from expert witnesses, including Minister Imena from Rwanda, regarding how the conflict minerals provision within Dodd-Frank is limiting opportunities to create jobs in the African mining sector, failing to improve the living standards for local miners, and failing to ensure source minerals from African nations that are totally free from bloodshed.

And with that, I yield back the balance of my time.

The Chair now recognizes the ranking member of the subcommittee, Ms. Moore, for 5 minutes for an opening statement.

Ms. MOORE. It is really great to be here with you today, Chairman Huizenga.

And I want to welcome all of our witnesses to discuss Section 1502, the so-called conflict mineral provisions of Dodd-Frank.

I have previously met with several of our witnesses and I look forward to hearing your testimony here today.

We have just had our second reporting period, and we have seen some improvements in the disclosure regimes of companies. Although still far from perfect, we anticipate that it will improve as time goes on.

What we have also seen is a clear overestimation of the cost of compliance. Let me say at the onset that I support this provision because the human rights violations that occur and that are being fueled by illicit trade in these materials is not something that we can or should ignore. And Section 1502, I believe, is a measured response.

Compliance will improve with time. The cost of compliance will decline, and the world will improve.

It is easy to think that this is happening in a far-off place, but we know in a global world that the problems and instability of far-off places frequently find their way to our shores. For example, in the first reporting period in 2014, 68 companies looking at their supply chain realized that they were buying gold refined by North Korea. Now, I assume that even the most ardent opponents of Section 1502 do not support North Korean products in the supply chain of U.S. businesses.

The United States is a leader in this area, and Europe and China are following.

We will hear some good news and some bad news from our witnesses, but we will still see improvement from year to year—from year one to year two. And I believe Section 1502 can work.

I am open to improving Section 1502, but now is not the time to discuss repeal of Section 1502, especially in this past weekend, as we have witnessed rogue organizations and rogue states seeking revenue streams for terrorist activities.

I am going to ask unanimous consent to place in the record the entire testimony of Representative McDermott of Washington, and I will read a little bit of it.

Chairman HUIZENGA. Without objection, it is so ordered.

Ms. MOORE. He says, "It was almost 6 years ago to the day that I introduced the Conflict Minerals Trade Act, which was designed to help stop trade in conflict minerals that were sustaining the brutal civil war in the Democratic Republic of the Congo. It is important to remember why we enacted Section 1502 in the first place: to take a real step forward in monitoring in mining and trade minerals that contributes to violence in the DRC. What my colleagues and I originally envisioned was a vehicle by which the links between the mineral trade and conflict could be broken."

Measured against that objective, Section 1502 has already achieved substantive progress. This was designed to be a thorough and comprehensive process, and I applaud those companies who from the start showed that compliance was possible by undertaking a complete and detailed account of their mineral supplies.

I am further encouraged by the conflict minerals disclosures that were released in June, which saw a marked improvement from the initial 2014 reports as more companies shed greater light on their supply chain. This law is changing the way supply chains are understood and ultimately how they function.

And with that, I yield back the balance of my time.

Chairman HUIZENGA. The gentlelady yields back.

Today, we have a great panel of experts, and we are very pleased that you are all here.

First, we are going to be welcoming the testimony of Jeff Schwartz, a professor of law at S.J. Quinney College of Law, at the University of Utah.

We also are joined by Kimberly Gianopoulos, Director of International Affairs and Trade for the GAO.

Next, I am very pleased to welcome the Honorable Evoke Imena, Minister of State, in charge of Mining, for the Ministry of Natural Resources, for the Republic of Rwanda.

And I would also like to point out that we are joined by Ambassador Mathilde Mukantabana, who is also here with us in the audience. Welcome, Ambassador.

Karen Woody is an assistant professor of business law and ethics at the Kelley School of Business at Indiana University.

And finally, Per-Olof Loof is the chief executive officer of KEMET Electronics Corporation.

Thank you all for being here, and you will now be recognized for 5 minutes to give an oral presentation of your testimony. And without objection, each of your written statements will be made a part of the record.

With that, Professor Schwartz, you are recognized for 5 minutes.

**STATEMENT OF JEFF SCHWARTZ, PROFESSOR OF LAW, S.J.
QUINNEY COLLEGE OF LAW, UNIVERSITY OF UTAH**

Mr. SCHWARTZ. Thank you.

Chairman Huizenga, Ranking Member Moore, and members of the subcommittee, thank you very much for having me here today. It is an honor.

In my testimony, I would like to make two points. The first is that Section 1502, the conflict minerals rule, isn't working. The second is that there is still hope for it. Relatively minor changes to

the legislation, to the implementing regulations, or to how the SEC interprets the current rules could render the initiative far more effective.

First, why do I say that Section 1502 isn't working? This assertion is based on my empirical study of the disclosures filed by companies in response to the legislation in 2014.

For this study, I read each filing submitted by a company in the S&P 500 Index—over 200 in total. In doing so, I measured compliance with each aspect of the conflict minerals rule and looked at the extent to which the disclosures served the purpose that Congress intended.

The purpose of the legislation is transparency—specifically, transparency with respect to corporate supply chains in conflict minerals: tin; tungsten; tantalum; and gold. The idea of the legislation was to force companies to make disclosures that would allow concerned shareholders and consumers to identify which companies should be praised and which companies should be condemned for their conflict mineral sourcing practices and their efforts to identify and understand any shortcomings.

Unfortunately, the legislation fails in this regard. The disclosures do not contain enough specifics for concerned stakeholders to make such determinations.

One cannot simply sit down and read the disclosures and tell which companies are committed to conflict-free sourcing and which are not. And if stakeholders can't sort companies in accordance with their sourcing practices, there is no incentive for companies to change them in accord with the humanitarian goals underlying Section 1502.

In short, the goal of Section 1502 was transparency with respect to conflict mineral supply chains, but we don't have it.

Why, then, do I think there is still hope for Section 1502? My empirical study revealed what went wrong with conflict minerals reporting, and thus provides insight into what we can do to fix it.

My big-picture takeaway with regard to what went wrong is that there is a mismatch between how the SEC thought companies would comply with the regulations and how they actually did. The rules seemed to anticipate that each company on its own would endeavor to trace its conflict minerals back to the mine of origin. That is not what happened, however.

Instead, companies centralized and coordinated their efforts through the Conflict-Free Sourcing Initiative (CFSI). Most importantly, CFSI audits smelters to determine whether the minerals they process come solely from conflict-free mines and then shares the results of its audits publicly on its website.

CFSI's efforts are enormously helpful to companies that are subject to Section 1502. Thanks to CFSI's efforts, all companies need to do is trace the conflict minerals in their products back to the smelters, which they should be able to do, and then look to see whether the smelters they have identified show up on CFSI's conflict-free list. If so, then the products for that company are conflict-free.

This method of compliance is far easier and far more effective than individual efforts. But the legislation and the regulations didn't foresee this method of compliance, so the regulations don't

ask the right questions to illuminate it. And therefore, the sought-after transparency has proven elusive.

If the rules were changed to reflect the centrality of the CFSI audit process, then we would get disclosures that were much more useful.

Finally, I would like to briefly mention one small change that would have a large impact. In the disclosures that I studied, only 31 percent of companies listed the identities of the smelters in their supply chain despite the rule's instruction that they do so.

Many companies explained that they failed to list this because while they could identify which smelters processed minerals for their suppliers, they could not identify which smelters processed minerals for their particular products. And because of this gap, the inability to match specific smelters to their products, companies left out the identity of their smelters from their conflict mineral disclosures.

Doing so, leaving this information out, is based on a narrow interpretation of the regulations. If the wording of the regulations were changed or if the SEC issued interpretive guidance telling companies that they need to include the identity of the smelters in their conflict mineral disclosures that are in their supply chain, regardless of whether they can link specific smelters to specific products, then we would get the identity of far more smelters into the disclosures, which would make them far more useful.

Thank you very much for having me here today.

[The prepared statement of Mr. Schwartz can be found on page 72 of the appendix.]

Chairman HUIZENGA. Thank you.

With that, I recognize Kimberly Gianopoulos for 5 minutes. Thank you.

STATEMENT OF KIMBERLY GIANOPOULOS, DIRECTOR, INTERNATIONAL AFFAIRS AND TRADE, U.S. GOVERNMENT ACCOUNTABILITY OFFICE (GAO)

Ms. GIANOPOULOS. Thank you, Mr. Chairman.

Chairman Huizenga, Ranking Member Moore, and members of the subcommittee, thank you for inviting me here today to talk about our work on conflict minerals. As you know, Section 1502 of the 2010 Dodd-Frank Act contained a provision for us to report annually on the effectiveness of the SEC rule in promoting peace and security in the DRC and adjoining countries. My statement today will focus on the findings from our August 2015 report, our sixth on this topic.

We focused on: first, a review of the SEC filings; and second, State and USAID's actions to implement the U.S. conflict minerals strategy.

First, I will discuss our review of the company filings. In 2014, for the first time, companies were required to file disclosures related to their use of conflict minerals from the DRC and adjoining countries. While the SEC estimated that about 6,000 companies could be affected by the rule, only 1,321 filed disclosures.

We drew a generalizable sample of those disclosures and found several things.

First, almost all of the companies reported performing country-of-origin inquiries for the conflict minerals that they used. Second, 94 percent of the companies reported exercising due diligence on the source and chain of custody of conflict minerals used.

Third, about two-thirds of the companies were unable to determine whether the conflict minerals came from the DRC or the adjoining countries. And finally, none of the companies could determine whether or not the minerals financed or benefited armed groups in these countries.

Through discussions with companies' representatives and our review of the filings, we learned that the companies encountered difficulties in getting the necessary information from suppliers because of delays and other challenges in communication. For example, some companies told us that they received incomplete information from their suppliers.

The Dodd-Frank Act also required State and USAID to prepare a conflict minerals strategy to address the linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products. This strategy was submitted to the Congress in 2011.

As part of the strategy, agencies supported a range of initiatives such as validation of conflict-free mine sites in the DRC, and strengthening traceability mechanisms that minimize the risk that minerals which have been exploited by illegal armed groups will enter the supply chain.

The first photograph from our November 2014 trip to the region, as you can see on the screen, shows a bag of tantalum at a DRC mine being prepared for tagging and export. USAID officials told us that local miners can earn double the price for certified conflict-free minerals compared to non-certified, illegal minerals, which is more than they would earn from smuggling.

Additionally, State reported funding a program for anti-human trafficking initiatives as well as to promote alternative livelihoods and improve workers' rights in the artisanal mining sector. For example, State gave us an example of a woman who used to transport minerals, which is a physically demanding and low-paying job. She received a kit to sell fish at an alternative livelihood training session, and she now makes a better living from selling fish and can pay her children's school fees without having to work in the mining sector.

However, there are significant challenges that agencies face in implementing these efforts, many of which are outside the control of the U.S. Government. The eastern DRC is insecure due to a number of factors including poor infrastructure, weak governance, and the presence of illegal armed groups and some corrupt members of the Congolese military.

Infrastructure challenges, such as the one you can see in our fifth photograph from our November 2014 trip to the DRC, make it difficult for police and other authorities to travel in the region and monitor mines for illegal activity. U.N. Security Force officials told us that armed groups continue to threaten and perpetrate violence against miners.

Finally, a member of the U.N. group of experts noted that smuggling remains prolific, and that instances of fraud call into question the integrity of some traceability mechanisms.

Thank you for the opportunity to testify today, and I am more than happy to answer any questions you may have.

[The prepared statement of Ms. Gianopoulos can be found on page 34 of the appendix.]

Chairman HUIZENGA. Thank you.

Mr. Imena, you now have 5 minutes for your oral presentation.

STATEMENT OF THE HONORABLE EVOKE IMENA, MINISTER OF STATE, IN CHARGE OF MINING, MINISTRY OF NATURAL RESOURCES, GOVERNMENT OF THE REPUBLIC OF RWANDA

Mr. IMENA. Thank you, Chairman Huizenga, Ranking Member Moore, and members of the subcommittee, for inviting me today and holding this important hearing. I am honored to testify on behalf of the United States' ally and friend, the Republic of Rwanda.

Rwanda has enjoyed significant political stability since emerging from the 1994 genocide against the Tutsi. Gaining recognition for an efficient and uncorrupt government, the country is currently experiencing unprecedented economic development.

Rwanda has rich deposits of 3T minerals: tin; tungsten; and tantalum. 3T minerals account for more than 90 percent of Rwanda's mineral production.

Mineral resources are very important to our economy. They represent 28 percent of national exports. The industry employs more than 37,000 people and supports livelihoods of about 1.5 percent of the population of Rwanda.

In Rwanda, we recognize the threats posed by the potential link between mineral resources and conflicts. That is why 4 years before the passage of Dodd-Frank, the government initiated a project to collect fingerprints of deposits, and later on we initiated the certified trading chains, a system based upon guidance from the Organisation for Economic Co-operation and Development (OECD).

When Section 1502 on conflict minerals was passed in 2010, the Government of Rwanda, in cooperation with the International Tin Research Institute, initiated a scheme to improve due diligence and traceability in order to reassure metal buyers of the provenance of their minerals.

Since then, a lot has been achieved: 100 percent of 3T minerals mined in Rwanda are traceable from the mine sites up to the point of exports; a modern database exists with information on mining operations, production records, and mineral trading transactions, and to ensure third-party verification, our government works with PACT, the Washington D.C.-based NGO, to implement the traceability mechanism.

Despite all of these efforts, we still face serious challenges. To name a few, the 10 countries covered by Section 1502 are at different levels of achievement and have different interests. Putting them in one box and applying a one-size-fits-all regulation is an impediment to implementation and fails to recognize efforts made by individual countries.

Today, the Rwandan mining industry bears the direct costs resulting from the conflict minerals due diligence framework. Those

costs are a burden to mine workers and mining companies, for which revenues have decreased by 3 to 6 percent. Currently, more money is spent in complying with conflict minerals regulations than money paid for government taxes.

I must, however, note a number of positive developments triggered by Dodd-Frank, including better record-keeping and reporting, increased monitoring and alignment of national regulations to best practices. These gains are among the reasons the ministry decided that regardless of what might happen to Section 1502, Rwanda will continue to have a robust traceability and be a reliable partner.

In an ideal world, everyone is innocent until proven guilty. But with Section 1502, all of our sources have been labeled “conflict minerals” and our job is to prove that they are innocent.

In conclusion, moving forward, we welcome a discussion about ways that we could partner with U.S. industry and the U.S. Government to identify strategies and improve the implementation of Dodd-Frank.

Let me take this opportunity to invite all of you to Rwanda to witness for yourselves the achievement made in the mining sector and discuss opportunities for development with Rwandan miners.

I welcome your questions, and thank you again for inviting me to participate today. Thank you.

[The prepared statement of Minister Imena can be found on page 58 of the appendix.]

Chairman HUIZENGA. Thank you, Minister.

With that, we have Professor Karen Woody, from Indiana University.

And, you have 5 minutes. Thank you.

STATEMENT OF KAREN E. WOODY, ASSISTANT PROFESSOR OF BUSINESS LAW AND ETHICS, KELLEY SCHOOL OF BUSINESS, INDIANA UNIVERSITY

Ms. WOODY. Thank you. Chairman Huizenga, Ranking Member Moore, and members of the subcommittee, thank you for the invitation to appear before you today.

My name is Karen Woody, and I am an assistant professor of business law and ethics at the Kelley School of Business at Indiana University. I have researched and written about the mandate and role of the Securities and Exchange Commission, particularly in enforcing Section 1502 of Dodd-Frank.

I will begin with some background information.

The Securities and Exchange Commission was founded in 1934 and bestowed by Congress with its three-pronged mission: first, to protect investors; second, to maintain fair, orderly, and efficient markets; and third, to facilitate capital formation.

The focus of the mandate is the creation and preservation of market integrity. In other words, the SEC was created to help assure investors that their investments are safe.

Markedly absent from this congressional mandate is any administrative authority or charge to effect international, diplomatic, or human rights-oriented goals.

Now, companies are required to make certain statutorily-mandated disclosures, triggered by events such as issuing new securi-

ties or electing new management. In addition to these disclosures, publicly traded companies must disclose any information considered material.

The SEC, through its regulation, has implicitly defined “material information” as information that bears on the economic value of an investment. The SEC’s understanding of the materiality standard is that a reasonable investor generally focuses on matters that have affected or will affect a company’s profitability and financial outlook. This understanding is in keeping with Supreme Court precedent, as well.

Section 1502 of Dodd-Frank, however, is not a financial regulation, but rather a provision aimed at ending the atrocities of a war occurring 7,000 miles from Wall Street. Assigning the SEC with oversight of conflict minerals disclosure is well beyond the SEC mandate and overextends the agency in ways that could prove harmful to its sole mission: investor and market protection, and capital formation.

When tasking an agency to work towards a goal outside of its mandate and outside of its expertise, the agency and the population it is designed to protect are losing out in two ways: first, by losing the opportunity that the proper agency and its experts would achieve the goal in a more efficient and more successful manner; and second, by reducing the ability of the mis-tasked agency to do its best with the proper tasks it should be accomplishing.

In other words, by tasking the SEC with regulation such as that of conflict minerals, one is foregoing the opportunity that another agency, such as the Department of State or the Office of Foreign Asset Control, can implement a better solution to achieve the humanitarian goals of the provision.

Moreover, there is an increased risk that the SEC will not have sufficient resources to accomplish the goals for which it was created. In practicality, this means the risk of another Enron or Madoff scandal increases because the agency is overextended.

This leads me to my second point, which is this: Absent the statutory requirement in Section 1502, information about conflict minerals likely would not meet the threshold for materiality. Conflict minerals disclosure is not a financial disclosure, and disclosure of social and environmental information is not typically required because that information to date has not been regarded as relevant or material to the financial condition of a company.

Proponents of Section 1502 and other measures enhancing these disclosure requirements point out that the general public’s increased awareness of conflict minerals has rendered it material information. The general public, however, is not the constituency of the SEC: the investors are. That is, the SEC was created to protect those who own Apple stock, not everyone who owns an iPhone.

If the SEC administered its regulations with an eye toward protecting all citizens rather than shareholders, it would be difficult to maintain capital formation and to balance the requirements of the agency’s mandate. For this reason, the SEC has never waded very far into regulation of human rights or foreign policy.

Furthermore, requiring the SEC to enforce these disclosure requirements stretches thin an already overburdened agency and demands that it oversee diplomatic and humanitarian regulations for

which it lacks the subject matter expertise and the enforcement resources.

Thank you again for the invitation to testify today, and I welcome any question you may have.

[The prepared statement of Ms. Woody can be found on page 137 of the appendix.]

Chairman HUIZENGA. Thank you. We appreciate that.

And last, but certainly not least, we have Per-Olof Loof, chief executive of KEMET.

And you have 5 minutes.

STATEMENT OF THE HONORABLE PER-OLOF LOOF, CHIEF EXECUTIVE OFFICER, KEMET ELECTRONICS CORPORATION

Mr. LOOF. Thank you, Chairman Huizenga, Ranking Member Moore, and members of the subcommittee, for holding this hearing and inviting me to tell my story.

My name is Per Loof, and I am the chief executive officer of KEMET Corporation, and chairman of the board of NEC TOKIN, a joint venture with NEC, headquartered in Tokyo.

KEMET is a leading supplier of electronic components. Founded in 1919, we manufacture the broadest range of capacitor technologies in the world.

We serve the military, automotive, industrial, telecommunications, computer, and medical markets. Including our joint venture, we have 17,000 people employed and a total of 28 manufacturing facilities globally, and we are listed on the New York Stock Exchange.

Tantalum capacitors have been the key product for us since 1958. Today, about 46 percent of our revenue comes from tantalum capacitors.

Tantalum ore is one area where the DRC actually can be a world leader. Simply put, it is easier to get to, and once you get it the density of tantalum in the material is significantly higher.

Tantalum is our single largest cost item. Acquiring tantalum at competitive prices and stable prices is paramount to our company.

This has always been a bit of a struggle, but during the global recession in 2008 and 2009, it became a real issue. Powder suppliers kept raising prices, seemingly unaware of what was going on around them. We had to figure something out, and the DRC was not, at the time, an option.

Already in the 1990s, as things became increasingly difficult in the DRC due to the conflicts, customers didn't want products with raw materials originating from the DRC. Some even said they didn't want blood tantalum capacitors.

We did procure from other locations, China mainly. But we all knew that DRC had the most cost-competitive source.

When the Dodd-Frank Act passed, I actually sensed a real business opportunity. Section 1502 could be the impetus for us to develop in the DRC a socially sustainable source for conflict-free tantalum ore.

We got going in 2011, after my first visit to Katanga and the village of Kisengo in northern Katanga. The objective was a vertically integrated, closed-pipe, sustainable sourcing model.

First, we helped create an industrial mine in the DRC. The mine is operated according to an agreement between us and the mining partner, MMR, and the people of the mining village of Kisengo, through their union.

Second, we had to get really serious about logistics. Kisengo in northern Katanga, to get to Kalemie on the shores of Lake Tanganyika is a real trip.

Third, we built an ore processing facility.

And finally, we bought a tantalum powder manufacturer in Carson City, Nevada.

All of our facilities have been audited and validated with the Conflict-Free Smelter Program. And globally, we have today invested over \$110 million in this venture.

Our investment has reduced some extreme fluctuation in ore and powder pricing in our former supply model. Being one of the largest tantalum users in the world, I believe our initiative has stabilized the pricing of this material not just for us but for the industry at large.

While some may argue that miners in the DRC have been negatively impacted by Dodd-Frank, I can say with certainty that this is not the case with our initiative and in our little village.

Our investment resulted in: an industrial mine, making it safer for the workers; a new hospital for the people of Kisengo, treating over 14,000 patients over the last year-and-a-half; a new school with 1,500 students; access to clean water; eradicating cholera from the village; the creation of a bunch of businesses to support the mine, the school, and the hospital; the installation of solar powered street lights; and refurbishing basic infrastructure.

The economic benefit to KEMET is multiples of what we have invested in the village. The annual run rate benefit to us is now at \$56 million. We were able to secure 86 jobs in Nevada and 200 jobs in South Carolina.

It is possible to succeed in business while being economically and socially responsible.

Section 1502 has been very good for the tantalum industry. There is little question on provenance and there is a clear road map how to ethically source DRC tantalum.

The Dodd-Frank Act has helped companies like KEMET to again, after decades of absence, be able to embrace the DRC and develop a competitive and secure supply chain, while also, of course, improving the lives of the people in the village.

I know we at KEMET cannot solve all of the problems in the DRC, but I do believe that we have had and will continue to make a positive impact on this little village—a village that you can hardly find on a map, but with 15,000 people living there 4 years ago, and now 30,000 people living there.

So I thank you all for allowing me to testify and tell our story. I will be happy to answer any of your questions.

[The prepared statement of Mr. Loof can be found on page 68 of the appendix.]

Chairman HUIZENGA. The Chair now recognizes himself for 5 minutes for questioning.

Mr. Loof, you just testified that what has happened in this was “very good for the tantalum market.” What I am concerned about—

you have the minister of mines sitting two down from you—is that it hasn’t necessarily been so good for Rwanda and for the countries affected.

We have seen the average price per month of tantalum ore fall from \$116 in January to about \$92. I understand that is very good for business, but aren’t you kind of invested in making sure Dodd-Frank stays exactly as it is, the status quo, and isn’t that a bit of a conflict of interest?

Mr. LOOF. Thank you, Mr. Chairman, but for KEMET it is very important that the prices are stable and that the sources are secure. And it is important not just for us but mainly for our customers.

Our customers are determined to ensure that whatever they buy from us is conflict-free and that the prices are stable. And what has happened through the investment that we have made and others have been able to benefit from, is we have been able to ensure a stable, cost-competitive source that allows the tantalum industry to continue to flourish.

Chairman HUIZENGA. All right. I need to turn to the minister of mines, but I will note that in your written testimony you said, “When the Dodd-Frank Act passed, I sensed a business opportunity.” So I understand this may be very good for your business; what I am concerned about is this might be misplaced for the folks in the countries that are affected by that.

So, Minister Imena, obviously, I think especially in the people in the West, we have talked about this and have had in previous hearings, we kind of lump in all of Africa together way too often, those 10 different countries within the Great Lakes Region. Rwanda had, as you have pointed out, its challenges and horrors 20 years ago, but it is a very different place now, and very different than the DRC and very different than some of the others.

In your testimony, you argue that Dodd-Frank’s one-size-fits-all approach is a mistake, and I would just like you to maybe elaborate a little bit more on that, if you would.

Mr. IMENA. Thank you very much, Mr. Chairman.

Geologically, we are in what is called the Kibaran Belt. That is a belt very rich in tin, tungsten, and tantalum. And that belt covers entirely Rwanda, and some parts of the eastern side of the Republic of Congo, and some parts of Burundi, Tanzania, and Uganda.

But in this Section 1502, 10 countries with different geological backgrounds and different economic, social, and cultural situations have been put together in a box and are required to do the same thing. And we don’t look at what is above ground, where are we, and where these countries are going. So that is the real challenge for Rwanda.

Chairman HUIZENGA. You had said in your testimony, you write we don’t have “conflict-free” minerals under Dodd-Frank, but you have Africa-free minerals with Dodd-Frank. Do you believe that economic instability is likely for Central Africa if this de facto boycott of material continues?

Mr. IMENA. Thank you very much, Mr. Chairman. The customer of these has reduced dramatically because companies are fearing to come and source directly from us.

We have a very limited number of companies working or buying from our producers, due to these regulations. Thank you.

Chairman HUIZENGA. And you have also testified that Rwanda pays more to comply with Section 1502 than it collects in mining taxes. This may go to Mr. Loof's questions about price stability and all of those things. You and I have had a little bit of a conversation about that.

But please tell the panel what Rwanda and what the Government of Rwanda would do if compliance costs weren't so burdensome, and what kinds of investments do you think could be made in your country and in your people?

Mr. IMENA. You are right, Mr. Chairman. It is today more costly to comply with these requirements than what we collect as taxes to develop the mining industry and to do some surveys and educate our people so that we can grow the industry.

It seems like it is really a burden from the small-scale miner up to the mineral exporter, and they don't really understand why. It is too costly, it is too difficult, and despite whatever they are trying to do, they don't see people coming and investing in the business.

Chairman HUIZENGA. And you said to me yesterday that you have been witnessing an 8 percent growth in the economy of Rwanda, but there has been some stagnation, correct, in mining?

Mr. IMENA. You are right, Mr. Chairman. We expect a reduction of around 50 percent, compared to what we are expecting from the mining sector. And this is also impacting the growth of the country.

Chairman HUIZENGA. Okay.

With that, my time has expired.

I now recognize the distinguished ranking member of the subcommittee, Ms. Moore, for 5 minutes.

Ms. MOORE. Thank you so much, Mr. Chairman. And I can tell you that I was not disappointed to hear such good information from this distinguished panel.

I guess—and someone can correct me if I am wrong—what I hear from you all is that—especially from you, the Honorable Imena—you really at a gut level believe that this is a good, socially responsible thing to do but for the problems in implementation, but for the speed bumps.

I heard Professor Schwartz say that there was hope, although it is not working because there are some things that need to be tweaked. I heard our GAO witness talk about the difficulties in doing it. I heard Professor Woody say that the SEC doesn't have the expertise necessarily to do that, nor the authority.

And I heard you, Honorable Imena, say that no matter what happens, you are committed to providing conflict-free minerals for the industry.

So I think that I am hearing that we are not at a point where people are suggesting that we throw the baby out with the bath water. Now, having said that, let me ask a couple of questions.

Let me start with you, Honorable Imena. I guess what I need to get a clearer picture of is the costs relating to compliance.

Has the government or the private industry done any sort of assessments to determine why there are \$6.1 million to comply? We have heard testimony here that people will pay a premium price to make sure that they are conflict-free. I know I want a diamond

badly, but I want a conflict-free diamond. But they will pay for that.

So do you think—I want to know, Honorable Imena, if you think that the private sector, that—using, for example, the tagging and bagging scheme run by the International Tin Research Institute, is a much more costly approach and that could be done at a lesser cost.

Do you think that if the private sector owns these mines—I guess I don't understand why—and if they are getting a premium price, I don't understand exactly why it is costing more. Can you dive a little deeper into that?

Mr. IMENA. Thank you very much, Congresswoman Moore, for that question.

I will address that by giving you some figures. Our region produces around 2 percent of the global tungsten. And when any company willing to source from Africa sees that they will be filling out different reports, and undergoing different audits, they just say, "Let's avoid Africa because it is just 2 percent of the tungsten."

When it comes to tin, we have a quite considerable share. But the number of companies interested in coming and continuing to do their business directly from our countries has reduced because of that—

Ms. MOORE. Okay, Honorable Imena, I don't have much time so I am interrupting you. So just with the tungsten, can they source it from non-conflict areas?

Mr. IMENA. Thank you—

Ms. MOORE. The other 98 percent?

Mr. IMENA. They can source it from Canada, from China, from many parts of the world.

Ms. MOORE. Is there anyone else on the panel who wants to address this particular issue?

Mr. Loof?

Mr. LOOF. Yes. I will be happy to. I can talk about the costs of implementing this system for our country, and we are the largest tantalum users in the world probably.

The bag and tag system is very simple. It needs a bit of discipline, but we all need discipline in whatever we do.

The cost of implementing this for us has been—last year we paid \$45,000 for the audits. We have two full-time equivalents working on this ongoing for the—

Ms. MOORE. So the \$6 million doesn't make any sense—

Mr. LOOF. This does not make any sense to us. We haven't seen that. For us, this has been an important business reason to go back into the Congo. And due to the fact that we now can tell our customers—because that is where this all originates; it is about people not willing to buy iPhones if they can't ensure that the tantalum used in those iPhones is conflict-free. That is where it starts.

And our ability to serve these customers are absolute—it is paramount that we can source it—

Ms. MOORE. Thank you. My time has expired.

Thank you, Mr. Chairman.

Chairman HUIZENGA. With that, we recognize—

Ms. MOORE. Mr. Chairman?

Chairman HUIZENGA. Yes—

Ms. MOORE. I ask unanimous consent request to place in the record letters—from the Responsible Sourcing Network, Panzi Hospital & Foundations, the Conflict-Free Initiative, the Enough Project, the National Association of Evangelicals, the Association for the Development of the Initiatives of the People, Congolese human rights NGO, the International Corporate Accountability Roundtable, and other documents, including George Inez Bonita y Amarne statement, Campus Initiative, Jewish World Watch, and Global Witness—supporting Section 1502.

Chairman HUIZENGA. Without objection, it is so ordered. All right. We will make sure that a forklift is provided—

[laughter]

With that, I would like to recognize the vice chairman of our Monetary Policy and Trade Subcommittee, Mr. Mulvaney from South Carolina, for 5 minutes.

Mr. MULVANEY. Thank you, Mr. Chairman.

Mr. Imena, I want to go back to something you had started talking about with the chairman and follow up a little bit. You mentioned that Section 1502 treats these 10 countries in the region similarly, or the same, that they are all in this same box together. You mentioned that, as well, in your opening statement.

So I am curious as to why you think that is inefficient or wrong, and how you would propose to change that? What is it about Rwanda that is different than the Congo and why they should be treated differently and not all painted with this same brush? And if you could be specific, that would be helpful.

Mr. IMENA. Thank you very much, Congressman.

The difference is that in Rwanda there is no single mine occupied by any armed group or any illegal group. There is no single route controlled by any illegal group. So the situation is totally different from what you have in some of the parts of these countries.

Mr. MULVANEY. Then how would you—

Chairman HUIZENGA. If the gentleman will yield just a moment—

Mr. MULVANEY. Absolutely.

Chairman HUIZENGA. —we do actually have a map, if you are interested, and we can put that map up. And without objection, I would love to share that map for the testimony.

Mr. MULVANEY. And while they are doing that, I will ask the question. So I understand that is one of the differences. If we sit here, and Ms. Moore and I get together afterwards and say, “Well, look, we are not going to get rid of Section 1502 for various political reasons in our country,” how could we improve it in order to reflect what you just said?

Mr. IMENA. Thank you very much, Congressman.

Normally when a country complies with some requirements or does what it is supposed to do, it graduates. But in our case, we are just stuck.

I think we need to work with U.S. companies, the U.S. Government, and get something that works for Rwanda but also for the United States, and to ensure that we are responsible, we are transparent, and we are cost-effective. This is what is lacking, being efficient and cost-effective.

Mr. MULVANEY. So I guess if I am trying to summarize that to my friends across the aisle, it would be that since Rwanda does not have the same challenges as the Democrat Republic of Congo, does that mean maybe we shouldn't treat it exactly the same as the DRC? Is that fair?

Mr. IMENA. Thank you, Congressman.

I will speak for Rwanda. We would like, really, Rwanda to be considered as conflict-free because there is no conflict in Rwanda.

Mr. MULVANEY. That is about as good a summary as I can think of. Thank you very much, Mr. Imena.

Professor Woody, you said something that has come up a couple of different times in these hearings over the last couple of years, which is that as well-intentioned and as admirable as the desired results of this rule are, there seems to be a fairly valid conversation as to whether or not the SEC is the right entity to enforce it. And you said something that caught my attention during your opening statement. You said that the SEC has neither the experience nor the personnel or the expertise to do this.

Could you flesh that out a little bit and tell us what you have seen in your research and why you think that is noteworthy?

Ms. WOODY. Yes. Thank you.

It is a valid question and now, as the chairman's opening remarks mentioned, there has been a significant amount of manpower and personnel put to this. But my point, simply, in my testimony is that is at the expense of using that staff and that personnel for other well-situated tasks within the agency.

And so for—if that answers your question?

Mr. MULVANEY. I think it does, and that is what I was expecting you to say. So I say again to—I see that the ranking member of the full Financial Services Committee, Ms. Waters, has come in, and to the ranking member of the subcommittee, as well, is that this comes back to a conversation we have had many times, which is that as well-intentioned as this is, there are things that the SEC has not been able to do because it has been spending time on this.

We are now coming up on many, many months after I asked Chair White where the rules were on parts of the JOBS Act, as many of you voted for—most specifically, some of the rules on crowd funding, which are now several years late, in large part, I think, because the time has been spent on issues like this.

So with that, I am not going to have a chance to ask another full question, so I will yield back the balance of my time.

I thank you all.

Chairman HUIZENGA. The gentleman yields back. I will make a note that Chair White will actually be here tomorrow for testimony in front of the full Financial Services Committee, and I intend to pursue that line of questioning with her.

I now recognize the ranking member of the full committee, Ms. Waters, for her 5 minutes.

Ms. WATERS. Thank you very much, Mr. Chairman. I'm sorry that I could not be here at the beginning of the hearing, but I want to thank you for having it. I think this is very important, and I am glad that you decided to take the time, because this is an important issue.

I served on the conference committee of Dodd-Frank, and I worked with Barney Frank on this issue. Some of us who have spent years dealing with different parts of Africa and trying to do everything that we could to not only support the peoples of the continent in different ways, whether we are talking about Northern Africa, South Africa, Central, or what have you, we believe that the continent is so rich in minerals and they have the kind of resources that could conceivably guarantee a good quality of life for all Africans.

And we believe that, of course, the entire continent has been exploited for far too long and that the people have not benefited from the rich resources in many of the parts of the continent. And so Section 1502 is important because we, in Dodd-Frank, took the opportunity to not only look after investors so that they would know where these minerals are coming from and not do anything, or try to do everything that we could to avoid the conflict and the different organized paramilitary efforts that were engaged in this conflict.

And so I am very pleased that the SEC is charged with oversight. I am very pleased that the SEC does not see this as something that they don't have time to pay attention to.

I just heard one of the gentlemen talk about how the SEC is so involved with the JOBS Act and all of that perhaps—I guess he was suggesting that maybe they should be spending time on this issue, or too much time is spent on this issue. I am just pleased to learn from my staff that our companies are doing a better job of reporting, that—and it is working, and that from the first report to the second report, we see a marked improvement. And I think that is very helpful.

Let me ask any of the members of the panel today, do you think Section 1502 in Dodd-Frank is helpful and should be supported and maintained?

Mr. LOOF. If I may answer that, Congresswoman, for us it is paramount. We could not be back in the DRC if we didn't have a sure, secure way of ensuring our customers, because that is where it all starts, that the tantalum that we—tantalum capacitors that we make actually are made from ore that sourced conflict-free.

Ms. WATERS. Anyone else?

Yes, sir?

Mr. IMENA. Thank you, Congresswoman.

I think one of the best way to solve conflicts is to create opportunities to grow economies. Section 1502, as it is written, is not allowing us to build the mining industry, to create jobs, to allow our people to develop. We need to do something because it is not working.

Ms. WATERS. Let me interrupt you a minute because I want to understand you. Would you repeat the statement about the SEC when they are not doing what? Would you repeat that?

Mr. IMENA. Section 1502 is not helping us grow our mining industry, employ people, create opportunities.

Ms. WATERS. How is it stopping you from doing that?

Mr. IMENA. Minerals have been labeled as conflicts—themselves. Even not being extracted, they are already conflict minerals. So

this is taking away a lot of companies which would be willing to invest and do business in Africa.

Ms. WATERS. And so you think perhaps if we could eliminate Section 1502 that you could develop your economy a lot better?

Mr. IMENA. Thank you, Congresswoman.

If we work on how we implement this regulation, we can do a lot.

Ms. WATERS. If you do what? I'm sorry, repeat that.

Mr. IMENA. If we change how we implement these regulations, we can do a lot.

Ms. WATERS. How would you suggest that we could be helpful?

Mr. IMENA. We need to work on how it can get cost-effective and how the de facto boycott on African minerals can be taken away.

Ms. WATERS. Would you describe to me the cost-effective problem that you are alluding to?

Chairman HUIZENGA. Unfortunately, we are going to have to have another—the gentlelady's time has expired. But this is a line of questioning we are hoping to continue to pursue.

I encourage my fellow Members to do that. And if possible, I am hoping that we are going to be able to get to a second round of questioning.

So with that, we recognize Mr. Pittenger of North Carolina for 5 minutes.

Mr. PITTENGER. Thank you, Mr. Chairman, for this important hearing.

I would like to continue on that line of questioning.

Please continue on the cost-effectiveness that you can employ inside your own country and what you can do to make this more efficient.

Mr. IMENA. Thank you very much, Congressman.

In Rwanda we have two type of levies. There is one we call the iTSCi and the other one we call the JIMBI. Both levies are taken or collected at the export points to finance the traceability mechanism.

For a ton of tin, for instance, we collect almost \$400. And that money is spent to pay auditors, to pay employees, and to make sure that the system works.

Four-hundred dollars is almost the same amount that the government collects as taxes, and those taxes would in turn be used to develop the industry, harmonize it, and build a responsible business in the country. But because we are spending a lot of money, and a lot of effort in complying with these regulations, we are not given enough resources to develop the industry in the country.

And our wish is to look at how can we efficiently work with the U.S. Government, with the U.S. private companies, to ensure that whatever product comes from Rwanda is clean; but for ourselves, that it is not very costly. And, most importantly, people are feared to come and work with us because we have tagged all our minerals that they are already conflict, which is not the case.

Thank you, sir.

Mr. PITTENGER. Thank you.

Professor Schwartz, would you like to weigh in on that?

Mr. SCHWARTZ. Sure. I think what the Honorable Mr. Imena says is troubling, that this is imposing costs on Rwanda, and that he makes a good point in that regard.

I guess the only thing I would say is that we have to always keep in mind when we are talking about the costs that we need to consider the benefits, and that while this might be costly for the government and it might be costly for companies, we also have to look at, is this decreasing the funding available to military groups in the Congo? And we need to weigh those against each other. And they are both abstract and this is difficult to do, but we just need to keep both sides of the equation in mind.

Mr. PITTENGER. Professor Woody?

Ms. WOODY. I would echo both the Honorable Imena's comments and Professor Schwartz's.

It is something that seems different with Rwanda, and it almost seems like we would have to have a representative from each of the neighboring countries here because each neighboring country of the Congo likely would have very different regulations and different—even as you pointed out—geographical characteristics, such that that would make—Section 1502 needs to be written in such a way that you would have to have discrete provisions for each of the countries that it affects.

Mr. PITTENGER. Ms. Gianopoulos, do you have anything else to add?

Ms. GIANOPOULOS. As part of our work, we really didn't look at the cost of putting this rules into effect. We have gotten a very mixed bag as far as the effectiveness of the rule in achieving the goals that it has been set out to do.

Part of that is because of the way the rule has been promulgated, in that larger companies have 2 years and smaller companies have 4 years before they have to actually determine whether or not the conflict minerals that they are employing are supporting armed groups. So that is part of the reason why we haven't addressed this issue.

Mr. PITTENGER. Thank you.

Many people have stated that Section 1502 has been a de facto embargo on the continent, as—on the country, and it is leaving the militias more in charge. Would you concur with that, Mr. Imena?

Mr. IMENA. Thank you very much, Congressman.

I will give an example. Before Dodd-Frank, we had a company from Germany which owned a mine, and they were extracting the minerals and shipping them immediately to Germany. But since the promulgation of this law, that company just ceased its operation and they were fearing about the auditing, about all the burden which will come with Section 1502 and they just stopped operations. Now the clients we have only for those minerals are coming from Asia.

So when you have a reduced number of people coming to source from you, immediately they put the price down, which also impacts your economy.

Mr. PITTENGER. Thank you.

Would anybody else like to weigh in on that?

I yield back.

Mr. LOOF. If I may jump in, Congressman, our experience is different. We couldn't actually be there unless there was a clear way of sourcing this thing in an ethical manner because we couldn't sell our products to our customers.

Chairman HUIZENGA. The gentleman's time has expired, and I am going to have a follow-up question on that personally, if it is not gotten to.

But with that, I recognize the gentleman from New Mexico, Mr. Pearce, for 5 minutes.

Mr. PEARCE. Yes, sir. Mr. Chairman, thank you very much.

Minister Imena, I will continue the discussion that Ms. Waters and Mr. Pittenger started.

But first I want to go to the Honorable Loof and ask if you have your own security forces to protect your mines to keep them from being taken over?

Mr. LOOF. No, we don't have. There are police—Federal police and mining police—in the mine site. The number of times I have been in the village there have been—there are always police present. I have never felt really threatened, and I have been able to walk around in the village quite openly and quite freely.

But clearly, I am no expert on the DRC, and I am no expert on the mining business. But for our experience in our little village, we have been able to create work and create safer work, and also been able to fund medical care at a whole different situation than before. As I said, we have eradicated cholera, and we are working on malaria right now.

Mr. PEARCE. I appreciate that. Having traveled to Uganda, Rwanda, Burundi, South Sudan, and Tanzania in the last 2 years multiple times, I suspected I would be concerned about people like Joseph Kony, who ranges freely. We stopped and talked with the U.S. forces who are trying to catch him, and he does—I am not asking a question; I am just making an observation that I would be concerned that your operation, if it is profitable, would be a target for somebody who has been able to pretty well do what he wants.

Mr. Imena, we have been to Rwanda, and I will tell you that as an outsider, I appreciate when I go in and see the cleanliness of your country and the kind of industriousness. And I have met with Paul Kagame personally and know that he is in the process of maybe getting an exception to move into another term and I would support him.

But I have found our State Department to be exactly on the opposite side of that; they seem to be trying to undermine him during our visits there and it is—again, the politics are very difficult to understand completely. And maybe I was mistaken, but I don't think so.

Do you think that Rwanda maybe has been singled out because of our disagreement between the State Department and Mr. Kagame and their resistance to him being there? Do you think that it is something as directed as that?

Mr. IMENA. Thank you very much, Congressman, and thank you for your good comments on the cleanliness of Kigali City.

For these other aspects beyond the mining sector, I will be pleased to refer them to our embassy here, and we can follow up with you. Thank you.

Mr. PEARCE. Thank you. Those are very carefully chosen, well-chosen comments.

[laughter]

Chairman HUIZENGA. The Chair will note, he is a professional diplomat.

Mr. PEARCE. He gets a special award for that particular answer.

I think Ms. Waters is really driving at something that is very critical: If there are ways that Section 1502 can be changed to accommodate what we all want, I think that the aspirations of the provision are noble.

I, like you, am concerned that it is penalizing a country that really is trying to move itself forward. And again, I see the industriousness of the people; I appreciate the quality of the society there. And anything that we can do to facilitate that would be, I think, good for both sides.

Mr. LOOF, have you considered going into Rwanda as a country and maybe establishing a second mine there, a second operation?

Mr. LOOF. We have not considered starting another mine in Rwanda, but we are sourcing material from Rwanda as well.

Mr. PEARCE. Okay.

Mr. LOOF. And that works in the same manner that it does in the DRC. I do recognize the situation in Rwanda is much different from the Congo. Luckily for us, the southern part of Congo, southeastern part, the Katanga province, has always been a little less violent than the other parts for the—

Mr. PEARCE. And the final question—thank you, sir.

The final question is to Ms. Gianopoulos: Do you have an observation about Professor Woody's comments about the SEC being overextended? I tend to believe it. I have watched as they have tried to get into the fracking question and the oil and gas industry, and so I wonder how in the world they have the resources. Do you note any of that extension of resources?

Ms. GIANOPOULOS. We have spoken with the SEC across the last several years that we have been under this mandate to report to you annually. When we talked with the SEC about how they were going to promulgate the rule, they did admit that they needed to come up to speed on a number of issues that they did not have expertise on, but that they reached out to the State Department as well as to other stakeholders, and when they promulgated the rule and asked for public comments, they received a number of written comments from both the private and the public sector in order to put it together in a meaningful way.

Mr. PEARCE. Thank you.

I yield back, Mr. Chairman.

Chairman HUIZENGA. The gentleman yields back.

I recognize the gentleman from Washington State, Mr. Heck, for 5 minutes.

Mr. HECK. Thank you, Mr. Chairman.

I am not entirely sure to whom I should address this question, but I think probably starting with Ms. Gianopoulos, and maybe Professor Schwartz. If anyone else wants to chime in, that would be fine.

I am a little bit old-school insofar as I believe that you can, in fact, catch more flies with honey than you can with vinegar. And

as a consequence, I think there is great value in pointing out and putting the spotlight on the success that some of this program has brought about.

I read with some considerable interest the report by Global Witness and Amnesty International on the first round of reports and took some personal pride in the fact that the Boeing Company, which, of course, I believe makes the finest airplanes on the face of the planet and does so mostly in the State of Washington, which I have the privilege to represent, was individually cited for the precision and depth of their disclosures. But for all my parochial pride, it prompted in me the question, well, after Boeing, maybe who else should be given a little honey, as it were, to spotlight their successes?

So I am wondering, in addition to the Boeing Company, Ms. Gianopoulos, if there are any—I wouldn't want you to just say one, but are there two or three companies that you thought had pretty good reporting and earnestly attempted to fulfill the spirit of the law among those that did report?

Ms. GIANOPOULOS. We took a generalizable sample of all different sizes of companies. I know Professor Schwartz was focused on a particular sector or a particular size of companies.

But across the various companies we tried to make it—to bring it up to a higher level. So I wouldn't be able to give you the names of individual companies of particular disclosure reports.

But this coming year, with the current cycle of our annual mandate, we are looking at the second round of disclosures and comparing them back to the first round to see how those have changed—positive, negative, or whatever. So I would probably have more to tell you in the next round of reporting.

Mr. HECK. Can you do it by sector? Is there any particular sector that you think overall did a little better job than—

Ms. GIANOPOULOS. Unfortunately, the generalizable sample that we took did not break it down by individual sector. We would have had to do a much larger sample for that. I'm sorry, sir.

Mr. HECK. Professor Schwartz, throw me a lifeline here.

Mr. SCHWARTZ. Thank you, Congressman.

I would single out Intel as having the best disclosures, and then I would also throw some honey towards Apple. Although Apple's disclosures didn't necessarily stand out to me in reviewing the reports, you can tell by looking at the website that they have internalized the idea of conflict-free sourcing and that they are endeavoring to illustrate to the public the extent to which they are actually trying to do so. And they have a diagram where they actually separate out their phone and show where everything came from on their website.

And then if I were to single out—I don't know if I could do it by industry, but I would single out as generally doing better those companies that are consumer-facing, so companies that actually—they sell their products directly to a customer, like Apple, rather than companies that are deeper in the supply chain. So those companies that are more worried about what the person buying their product on the street is going to think, they are tending to be more responsive to these rules.

And I would also say that there has been some improvement in the reporting year over year, but there is still a long way to go.

Mr. HECK. Professor Woody, do you have anything to add?

Ms. WOODY. I also couldn't speak necessarily to any individual company, but I agree that for the most part, the press that I have read has singled out Intel as being one of the forerunners of doing very comprehensive due diligence on their supply chain.

Mr. HECK. That would be, of course, in addition to the Boeing Company.

Ms. WOODY. Yes. I'm sorry. Of course, Boeing, as well.

Mr. HECK. That is really all I have, Mr. Chairman. Thank you for holding this hearing. With that, I yield back the balance of my time.

Chairman HUIZENGA. The gentleman from Boeing, I mean Washington, yields back.

[laughter]

Okay. It was meant purely as a jest, so with that, the Chair recognizes the gentleman from Minnesota, Mr. Emmer.

Mr. EMMER. Thank you, Mr. Chairman.

And thanks to the witnesses, again, for taking the time to be here today.

Mr. IMENA, it is my understanding that a U.S. Federal court—at least one, perhaps more—has struck down a large and important requirement from Section 1502, and I am referring specifically to the requirement that companies file with the SEC to indicate that the minerals they use are “conflict-free.” How do you think this will affect any United States and Western companies and their suppliers in terms of doing future business in Rwanda?

Mr. IMENA. Thank you very much, Congressman, for the question.

We are following that case closely, but obviously it is beyond any control of the Government of Rwanda. But the concern to us is the uncertainty it is creating, because as long as the case is still before the courts, it creates uncertainty, and we are not able to predict whatever will happen in the future. Thank you.

Mr. EMMER. It hasn't relieved the filing; it just—you are waiting to see if ultimately—let's just say the case is affirmed. I assume it is on appeal. Let's say the case is affirmed. How will that affect the U.S. and Western companies and their suppliers in terms of doing future business with Rwanda?

Mr. IMENA. Still there will be a problem to us because Section 1502 will be there and the region will continue to be struggling because of that de facto boycott. So, the concern would remain.

Mr. EMMER. Thank you.

What other traceability systems for 3T minerals are currently being used by Rwanda's neighbors, Mr. Imena?

Mr. IMENA. Today, we have the iTSCi. That is the ITRI Tin Supply Chain Initiative.

We tested the METRUCK. It is another electronic system. And we also have the regional certification mechanism, called the International Conference on the Great Lakes Region.

So both schemes that we are having on the ground, but the most efficient one is the iTSCi.

Mr. EMMER. All right.

Mr. IMENA. Thank you.

Mr. EMMER. And what are some of the development and investment challenges in terms of scaling up your mining sector in Rwanda? Where do you see the best opportunities for growth?

Mr. IMENA. Thank you, Congressman.

The best opportunities are at value addition. We have very good opportunities to create refineries and processing facilities in Rwanda. We also have very good opportunities in other minerals rather than 3Ts, like the gemstone.

We also have very good opportunities in transforming and modernizing the mining industry from a small-scale, artisanal industry to an industrial operations.

Mr. EMMER. Thank you, Mr. Imena.

Changing gears just a little bit, Professor Schwartz, I appreciate all of your research, the empirical evidence you presented. But as I was reading through it and then listening to you again today, on the one hand, when I read it it sounded as though you—or I took from it that you are not impressed with Section 1502, it is not doing what it was intended to do, and that we should get rid of it.

But then I get to another portion of your testimony and you start to offer a potential better way of doing it. And I have heard you talk about this here this morning.

So the question I have is—to you, Professor Schwartz—should we get rid of Section 1502 or should we fix it, and why?

Mr. SCHWARTZ. Thank you very much, Congressman.

And you are definitely right that I have a lot of criticism for Section 1502, but the way I ultimately come down is that it is worth trying to salvage. And when I was writing that paper and thinking about what we should do next, it was—I was weighing, is this section fundamentally flawed so it should just be repealed, or is there a way to fix it?

And I ultimately come down in thinking that there are ways to fix it and that primarily, if we ask some different questions, so ask companies—so the way companies complied was commonly through surveying their suppliers, so if we ask companies what their survey response rate was with respect to their suppliers, and if they followed up with their suppliers; and if we ask companies to identify the actual mine of origin and who controls the mine of origin.

So if we ask some different questions, we might get better answers to what is going on in these companies' supply chains. And much of the rule, I think, is written with an eye towards process—but do these companies have the right process in place—and not enough with an eye towards substance.

So I think when we ask more substantive questions like, “Okay, who are your suppliers,” make it more clear that the companies need to identify their smelters in their supply chain, and make it so that we really can unfold the supply chain and get that onto the reports, I think it could be better.

Mr. EMMER. But you weren't actually making a determination as to whether Section 1502 would be better, for instance, than the traceability systems that are currently being tested in the region?

Mr. SCHWARTZ. That is a good point. They are all actually connected, so I can't—

Mr. EMMER. It is a yes-or-no question. You weren't actually doing that, trying to compare Section 1502 and whether its benefits outweigh the cost, as opposed to the traceability systems that are currently being tested?

Mr. SCHWARTZ. They are connected. So iTSCi is a way to trace conflict minerals in order to comply with Section 1502, so that is why I said they are related together, that they are tied together.

Mr. EMMER. But you wouldn't need it—

Mr. SCHWARTZ. I'm sorry?

Mr. EMMER. My time has expired. Thank you.

Chairman HUIZENGA. I will allow you to answer that last question.

Mr. EMMER. My last one was, but you don't need Section 1502. I understand you are saying they are related, Professor, but you don't need it. If the traceability systems that are currently being tested in the region work, then it would solve the problem, allegedly, that the purportedly Section 1502 is supposed to address, correct?

Mr. SCHWARTZ. Correct. I see what you are saying. So if the tracing schemes are already in place, then perhaps the legislation is unnecessary. I understand—

Mr. EMMER. Thank you very much.

I yield back.

Chairman HUIZENGA. The gentleman's time has expired.

And the Chair is sitting here with a bit of embarrassment and egg on his face. I offered a private apology to Mr. Heck up here, and I now want to publicly apologize, as well. My misdirected and misguided Irish sense of humor got out in front of my thinking process and I in no way intended to suggest or impugn his character or independence, and I hope he will allow me to chalk that up as a lesson learned. He has assured me that he will, but I wanted to make that public, as well.

So with that, I would like to recognize the gentleman from California, Mr. Sherman, for 5 minutes.

Mr. SHERMAN. I thank the chairman for allowing me to participate.

I will point out that the tracing schemes and other ways to deal with this issue, I think get their impetus from Section 1502 and the effort that led to Section 1502.

I will ask our witness from the GAO, is there a difference in the market price, because these are traded goods, in these 3T minerals where they are coming from outside this region versus coming from inside the relevant region? Is there a difference in price?

Ms. GIANOPOULOS. We haven't—

Mr. SHERMAN. A pound of tin is a pound of tin.

Ms. GIANOPOULOS. Right. We haven't done an analysis of the price of minerals that are coming from outside the Great Lakes Region and those from inside the Great Lakes Region. What we looked at and what we spoke with folks in the region about was, what difference does it make if a particular mine is certified as conflict-free when it comes to the price of those minerals?

Mr. SHERMAN. And what is that price differential, a conflict-free versus an uncertified mine? What is the difference in price?

Ms. GIANOPOULOS. What we heard was if minerals are coming from a certified conflict-free mine, the miners are receiving about double the price for those minerals than they would from an uncertified, potentially illegal mine.

Mr. SHERMAN. Mr. Loof, is that your experience, that you will pay twice as much for a certified rather than an uncertified pound of tin?

Mr. LOOF. We wouldn't buy from an uncertified smelter, period.

Mr. SHERMAN. How much more are you paying to get certified tin as opposed to your competitors who are using uncertified tin?

Mr. LOOF. It is actually a little different. It doesn't actually work that way for us.

What has happened is due to, I believe, the efforts we have taken to ensure that we can do this in a conflict-free and ethical manner, we have been able to stabilize the price. And because we actually have our own source of material, we have been able to extract the same price from anywhere in the world when we buy from somebody else today, so our business—

Mr. SHERMAN. So you are able to take a stand against the evils that we have seen in some of the mining operations at no discernable higher price for the minerals involved?

Mr. LOOF. I don't want to say that what we are doing is, in a major way, changing the lives of the Congo, but I can certainly say that for us the pricing has been more stable, the sourcing of this mineral has been more secure, and in our little village, which has grown twice as big as it was 4 years ago when we got in there, life has improved significantly.

Mr. SHERMAN. Doing well by doing good.

Professor Schwartz, you have—you are looking for tweaks in Section 1502. Are you looking for tweaks in the statute or—"tweaks" may be understating it. You are looking for changed regulations or changed statute?

Mr. SCHWARTZ. I think there is a range of options. I think there could be some changes to the statute.

If you are fully on board with my proposal, I think that might implicate some changes to the statute. But I think a lot could be done just by changing the regulations, or even through interpretive guidance.

There is some vague language in the statute and the regulations, and some companies very narrowly interpreted that language. So if it was clarified what companies needed to report in terms of the identity of their smelter, I think that would improve things and that would be a small tweak that the SEC could do.

Mr. SHERMAN. Does the SEC have the advisory committees and the channels to listen to you and others to improve their regulations and guidance?

Mr. SCHWARTZ. I think they do. The SEC is actually fairly reachable. Oftentimes, when I send my work to them, I will get a response. But they don't have a formalized process in place.

Mr. SHERMAN. Okay.

Obviously, there are those pushing in the business community just to eliminate Section 1502. Have any of them come up with a solution, or do they just say, "Don't worry about the problem?"

Professor?

Mr. SCHWARTZ. I think the general response in the business community from those who are opposed to this rule is to just repeal. You don't generally see middle-of-the-road options like I am proposing.

Mr. SHERMAN. I would just say that the effect of these conflict minerals on people's lives in the Great Lakes Region is significant. The fact that Mr. Loof and others are able to help people build lives through conflict-free and certified minerals is substantial, and for the business community to just say, "Oh, that is just a goal not worth trying to achieve," is not as good a stance as those whom you have mentioned positively, or other witnesses have mentioned positively, such as Intel and Apple, who seem to take seriously the effect that their sourcing minerals have on the lives of people in the Great Lakes Region.

And I will yield back.

Chairman HUIZENGA. The gentleman's time has expired.

And without objection, I would like to do a brief second round, since it looks like it may be just the vice—

Ms. WATERS. Thank you very much. I think there is an awful lot to be learned about—

Chairman HUIZENGA. I will recognize the gentlelady first, if she would like to go first. Ladies first. And feel free to go ahead.

Ms. WATERS. Mr. Chairman—

Chairman HUIZENGA. I would be happy to follow up and wrap up.

Ms. WATERS. I thought you were looking this way. But please, take your rightful time. Thank you.

Chairman HUIZENGA. I am happy to do so.

But, all right, I want to still continue to unpack this a little bit. And we have heard from the ends here, Mr. Loof, we have heard from Professor Schwartz.

We have not heard from Minister Imena, as well, and I know that Mr. Loof here had said that you couldn't be there without Dodd-Frank, is what I heard. And I guess what struck me and a question that I had written down at that time was, even with a non-Dodd-Frank system in place, you couldn't be there?

So in other words, Minister Imena had talked about how Rwanda, well before Dodd-Frank ever put in Section 1502, was working on a system that guaranteed that conflict-free mineral. And what I am concerned about again, and I think what we have heard from the minister—I don't want to put words in his mouth—but when it is 2 percent, I believe, of the tantalum on the world market and 4 percent of tungsten, or I might have those reversed, there is still 96 and 98 percent of the world market that is not subject to this, and doesn't that put a place like Rwanda at a distinct disadvantage if they have the types of cost structure?

So I guess my specific question to you, Mr. Loof, is could you be there if there was a non-Dodd-Frank system that would fulfill your internal mandate to your customers that you wanted to have conflict-free minerals?

Mr. LOOF. Thank you for your question. And I do recognize the situation in Rwanda is quite different from the part of the world where we have our operation.

But the issue for us was to have a clear playbook that we and our customers can agree on, so that if you fulfill this playbook, you

are actually by definition legally conflict-free. Otherwise, if there wasn't this playbook we would be in a constant conversation as to whether the bag and tag system we use and the way we transport the material through the bush in Katanga down to Kalemie and across the lake is, indeed, conflict-free.

If that wasn't clear to our customers, we couldn't actually operate the way we are. And that is really where I am coming from.

Chairman HUIZENGA. Okay.

Mr. LOOF. But I do recognize that the minister has a different situation in Rwanda.

Chairman HUIZENGA. And, Minister, do you care to address that briefly?

Mr. IMENA. Thank you very much, Mr. Chairman.

You are right, before Dodd-Frank had this system, we tested the analytical fingerprint; we tested the CTC, certified trading chains. Both systems were voluntary. But when Section 1502 came and it was mandatory, we immediately shifted to it and we lost the attention for both other systems.

It means that if there is no Dodd-Frank, Rwanda is committed to continue to ensure to be a source of clean, transparent, and reliable minerals.

Chairman HUIZENGA. Okay.

Professor Schwartz, I was gathering from your conversation with Mr. Emmer—and, Professor Woody, I would like to have you comment, as well, on this—about the SEC's capability and broad—their bandwidth as they are dealing with this. We heard a couple of examples: We have not seen JOBS Act regulations be put in place; we have seen a number of other delays that have been put in place.

We do know from the GAO reports that 21,000 hours have been put into this at a substantial cost—I don't have that right in front of me right now.

Ms. Gianopoulos, I don't know if you recall exactly what that number is. It is significant.

Ms. GIANOPOULOS. "Significant" is fair.

Chairman HUIZENGA. Okay.

So in the last remaining minute here or so, Professor Schwartz, Professor Woody, talk to me a little bit about the SEC and whether they could be doing additional things if they weren't putting an outsized amount of effort into this.

Mr. SCHWARTZ. Yes. And thank you for the question, Mr. Chairman.

Yes, I agree with what has been said, that the SEC is overstretched here, and just in general, and that this additionally stretches their expertise. So I think it is less than ideal that the legislation has fallen to the SEC to oversee and to implement and to enforce.

I guess if I were to defend it, I would say that we could have a more dynamic conception of the SEC that agencies aren't static over time and that if we take a more dynamic perspective, maybe it needs to evolve to embrace these social disclosures. But I agree that this stretches them both in terms of manpower and expertise.

Chairman HUIZENGA. And Professor Woody, quickly?

Ms. WOODY. Yes. I would agree. The SEC certainly, just in sheer economic principle here, people who are working on this are not working on something else.

And that said, I think the import of my testimony here today is really the broader picture, that there are a couple of problems with this regulation as written, in that the SEC has no real effective measurement of progress or a way to really quantify a reduction in violence in the Congo via the disclosures. Again, there is no penalty even for the use of conflict minerals under the law, so mere disclosure is really the only charge that is required here, so that alone seems to render the SEC fairly toothless in this.

Chairman HUIZENGA. And I think that is fair to point out, that there is no penalty. So if you don't particularly care what your interface is with the public or with that customer, you could go right ahead and continue to use conflict minerals, correct?

Ms. WOODY. That is correct.

Chairman HUIZENGA. All right. Which other countries may be doing.

So with that, my time has expired, and I would like to recognize the ranking member of the full committee for 5 minutes.

Ms. WATERS. Thank you very much, Mr. Chairman.

This may have been described, but I would like Mr. Imena to describe to me what was happening prior to Section 1502 in the region.

Mr. IMENA. Thank you, Congresswoman.

It depends on which country, but in Rwanda before Section 1502, and today after Section 1502, we were mining tin, tungsten, and tantalum. And there was no conflict mineral before, and there is no conflict mineral today.

The only change is the introduction of that regulation, which sometimes was taken as a burden to many of the operators in the region and essentially in Rwanda. Thank you.

Ms. WATERS. So can you describe to me what the smuggling problem was or is—smuggling conflict minerals from the Democratic Republic of Congo to Rwanda? What is that all about?

Mr. IMENA. Thank you, Congresswoman.

That has existed in the past. And today, with all the illegal exploitation of metal resources in the country and in the region, our heads of state in 2006 signed a pact of the International Conference on the Great Lakes Region.

And one of the areas covered by that pact is the Regional Initiative on the Illegal Exploitation of Natural Resources. We have teams and committees following up closely any claim of any illegal transportation, and illegal sale, or any illegal cross-border activity where minerals are concerned.

Ms. WATERS. All of the smuggling has been basically gotten rid of? You don't have any smuggling from the DRC to Rwanda, is that right?

Mr. IMENA. Thank you, Congresswoman.

Smuggling is criminal in Rwandan law. Whenever there is any issue relating to smuggling, we have enforcement capacity and we immediately take actions. As is mentioned in my statement, where even giving an example of a company which was mentioned in the last U.N. group of experts report, which was immediately sanc-

tioned and its license was cancelled because we found that they were doing some illegal and illicit activities.

Ms. WATERS. So you are saying Section 1502 may be needed for DRC but not for Rwanda. Is that right?

Mr. IMENA. You are right.

Ms. WATERS. And you are saying that because of the conflict mineral problem in DRC, you are perceived somehow by the international community or by America as having the same problem and that is what bothers you?

Mr. IMENA. You are right, Congresswoman.

Ms. WATERS. And you believe that even though the DRC needs Section 1502 and you don't, that Section 1502 should be modified or gotten rid of in some way?

Mr. IMENA. I will not speak for the DRC, but for the Rwandan case, Section 1502 is not helping at all.

Ms. WATERS. But you are not for—you won't speak for the DRC, but DRC has no negative impact on Rwanda at all now because you have smuggling covered. Is that right?

Mr. IMENA. There are many areas, as long as Rwanda and DRC relations are concerned. But for minerals and for Section 1502, we need to do something.

Ms. WATERS. Let me just say, I think that is Mr. Schwartz down on the end, you agreed with the Chair about the SEC and you think that the SEC is oversubscribed and they don't have the personnel to deal with some of the other mandates that they have. Are you aware of the opposition to funding the SEC so that it can cover its missions by Members of Congress?

Mr. SCHWARTZ. So yes, I have followed that debate, and I am not going to claim to be an expert on it, but I have followed that debate, yes.

Ms. WATERS. So you know they are underfunded?

Mr. SCHWARTZ. I'm sorry. Say that again?

Ms. WATERS. You know the SEC is underfunded?

Mr. SCHWARTZ. Yes, I would agree that the SEC is underfunded.

Ms. WATERS. And if we are desirous of the SEC carrying out its missions, we probably should try and see that it is funded properly so we wouldn't be in a position of saying they can't do their job properly because they are oversubscribed. I guess that could be the conclusion.

Mr. SCHWARTZ. I would agree. If the worry is the opportunity cost for the SEC's time, then the answer would be if we hired more people at the SEC, they could attend to all of the tasks that are assigned to them.

You could even envision hiring—you could even envision a department of the SEC for social disclosures that would internalize the values of regulations like the conflict minerals rule, and they could enforce provisions like this and implement the rules.

Ms. WATERS. Thank you, Mr. Chairman.

Chairman HUIZENGA. The gentlelady's time has expired.

So I would like to thank our witnesses for their testimony today. And without objection, I would like to submit a statement for the record from the National Association of Manufacturers.

Without objection, it is so ordered.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 5 legislative days for Members to submit written questions to these witnesses and to place their responses in the record. Also, without objection, Members will have 5 legislative days to submit extraneous materials to the Chair for inclusion in the record.

And again, I just would like to say thank you to our distinguished panel. I thought this was illuminating. I am hoping that we will do additional hearings on this. That is my intent, as well.

And with that, our hearing is adjourned.

[Whereupon, at 11:48 a.m., the hearing was adjourned.]

A P P E N D I X

November 17, 2015



United States Government Accountability Office

Testimony before the Subcommittee on
Monetary Policy and Trade, Committee
on Financial Services, House of
Representatives

For Release on Delivery
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2015

SEC CONFLICT MINERALS RULE

Insights from Companies' Initial Disclosures and State and USAID Actions in the Democratic Republic of the Congo Region

Statement of Kimberly Gianopoulos, Director,
International Affairs and Trade

GAO Highlights

Highlights of GAO-16-200T, a testimony before the Subcommittee on Monetary Policy and Trade, Committee on Financial Services, House of Representatives

Why GAO Did This Study

Armed groups in eastern DRC continue to commit severe human rights abuses and profit from the exploitation of minerals, according to the United Nations. Congress included a provision in the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act that, among other things, directed SEC to promulgate disclosure and reporting regulations regarding the use of conflict minerals from the DRC and adjoining countries. The act also directed State and USAID to develop a strategy to address the linkages among human rights abuses, armed groups, the mining of conflict minerals, and commercial products.

This testimony summarizes the findings from GAO's August 2015 report, which reviewed (1) company disclosures filed with SEC for the first time in 2014 in response to the SEC conflict minerals disclosure rule, and (2) State and USAID actions related to the U.S. conflict minerals strategy in the DRC region, among other things. GAO reviewed and analyzed relevant documents and data and interviewed officials from relevant U.S. agencies and nongovernmental, industry, and international organizations; and analyzed a random sample of company disclosures from the SEC database that was sufficiently large to produce estimates for all companies that filed. GAO also traveled to the DRC, Rwanda, and Burundi to conduct field work.

What GAO Recommends

GAO is not making recommendations in this testimony.

View GAO-16-200T. For more information, contact Kimberly Gianopoulos at (202) 512-8612 or GianopoulosK@gao.gov.

November 17, 2015

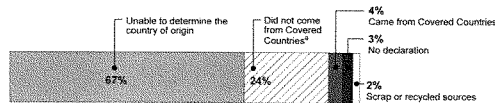
SEC CONFLICT MINERALS RULE

Insights from Companies' Initial Disclosures and State and USAID Actions in the Democratic Republic of the Congo Region

What GAO Found

According to a generalizable sample GAO reviewed, company disclosures filed with the Securities and Exchange Commission (SEC) for the first time in 2014 in response to the SEC conflict minerals disclosure rule indicated that most companies were unable to determine the source of conflict minerals used in their products. Companies that filed disclosures used one or more of the four "conflict minerals"—tantalum, tin, tungsten, and gold—determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo (DRC) or adjoining countries. Eighty-seven percent of those companies were based in the United States. Almost all of the companies (99 percent) reported performing country-of-origin inquiries for conflict minerals used. Companies GAO spoke to cited difficulty obtaining necessary information from suppliers because of delays and other challenges in communication. Most of the companies (94 percent) reported exercising due diligence on the source and chain of custody of conflict minerals used. However, 67 percent were unable to determine whether those minerals came from the DRC or adjoining countries (Covered Countries), and none could determine whether the minerals financed or benefited armed groups in those countries.

Types of Company Declarations Reported in Response to the SEC Conflict Minerals Disclosure Rule in 2014



Source: GAO. | GAO-16-200T

*Covered Countries: Angola, Burundi, Central African Republic, the Democratic Republic of the Congo, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia.

Department of State (State) and U.S. Agency for International Development (USAID) officials reported taking actions to implement the U.S. conflict minerals strategy, but a difficult operating environment complicates this implementation. The agencies reported supporting a range of initiatives including validation of conflict-free mine sites in the DRC and strengthening traceability mechanisms that minimize the risk that minerals that have been exploited by illegal armed groups will enter the supply chain. Implementation of the U.S. conflict minerals strategy faces multiple obstacles outside the control of the U.S. government. For example, eastern DRC is plagued by insecurity because of the presence of illegal armed groups and some corrupt members of the national military, weak governance, and poor infrastructure.



U.S. GOVERNMENT ACCOUNTABILITY OFFICE

441 G St. N.W.
Washington, DC 20548

November 17, 2015

Chairman Huizenga, Ranking Member Moore, and Members of the Subcommittee:

Thank you for the opportunity to discuss our work on conflict minerals. Over the past decade, the United States and the international community have sought to improve security in the Democratic Republic of the Congo (DRC), the site of one of the world's worst humanitarian crises. The International Rescue Committee estimates that between 1998 and 2010, more than 5.4 million people died there as a result of this crisis, which has also destabilized and created insecurity in the minerals-rich eastern part of the country. As we previously reported, illegal armed groups and some units of the Congolese national military have committed severe human rights abuses and mass killings and profited from the illegal exploitation of minerals originating in eastern DRC.¹

Expressing a sense that the exploitation and trade of conflict minerals originating in the DRC is contributing to an emergency humanitarian situation therein, Congress included a provision in the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (the act) pertaining to the trade in "conflict minerals"—tantalum, tin, tungsten, and gold.² Section 1502 of the act directed several U.S. agencies to take certain actions to implement the act's conflict minerals provisions. For example, Section 1502(b) required the Securities Exchange Commission (SEC), in consultation with the Department of State (State), to promulgate disclosure and reporting regulations regarding the use of conflict minerals from the DRC and adjoining countries. Accordingly, SEC adopted its conflict minerals disclosure rule in August 2012, and companies filed disclosures for the first time in response to the rule in 2014, on conflict

¹GAO, *The Democratic Republic of the Congo: U.S. Agencies Should Take Further Action to Contribute to the Effective Regulation and Control of the Minerals Trade in Eastern Democratic Republic of the Congo*, GAO-10-1030 (Washington, D.C.: Sept. 30, 2010).

²The Dodd-Frank Act defines conflict minerals as columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives, or any other mineral or its derivatives that are determined by the Secretary of State to be financing conflict in the DRC or an adjoining country. See Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213-18. Columbite-tantalite, cassiterite, and wolframite are the ores from which tantalum, tin, and tungsten, respectively, are processed.

minerals used in calendar year 2013.³ The act also required State, in consultation with the U.S. Agency for International Development (USAID), to submit to appropriate congressional committees a conflict minerals strategy to address the linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products.⁴ The act contained a provision for GAO to, among other things, report annually, beginning in July 2012, on the effectiveness of the SEC rule in promoting peace and security in the DRC and adjoining countries.⁵

This statement summarizes key findings from our August 2015 report, in which we examined, among other things, (1) company disclosures filed with SEC for the first time in 2014 in response to the SEC conflict minerals rule, and (2) State and USAID actions related to the U.S. conflict minerals strategy in the DRC region.⁶ In brief, we found that company disclosures filed in 2014 indicate that companies performed country-of-origin inquiry and due diligence but provide limited insights regarding country of origin of conflict minerals used, citing difficulty obtaining information from suppliers. We also found that State and USAID actions to implement the U.S. conflict minerals strategy have yielded some results, but conditions remain difficult.

To conduct our review, we analyzed documents and data and interviewed officials from State, USAID, SEC, the Department of Commerce, nongovernmental organizations (NGO), industry, and international organizations, including offices within the United Nations (UN). We analyzed a random sample of 147 reports from a population of 1,324 to

³Conflict Minerals, 77 Fed. Reg. 56,274 (Sept. 12, 2012) (codified at 17 C.F.R. § 240.13p-1).

⁴See Pub. L. No. 111-203, § 1502(c). Section 1502 of the act defines “appropriate congressional committees” to mean the Committee on Appropriations, the Committee on Foreign Affairs, the Committee on Ways and Means, and the Committee on Financial Services of the House of Representatives, and the Committee on Appropriations; the Committee on Foreign Relations; the Committee on Finance; and the Committee on Banking, Housing, and Urban Affairs of the Senate.

⁵Pub. L. No. 111-203, § 1502(d).

⁶GAO, *SEC Conflict Minerals Rule: Initial Disclosures Indicate Most Companies Were Unable to Determine the Source of Their Conflict Minerals*, GAO-15-561 (Washington, D.C.: Aug. 18, 2015). This report is one of six that we have issued since 2010 examining issues related to the minerals sector and violence in the DRC and adjoining countries. For a list of related GAO products, see appendix I.

create estimates generalizable to the population of all companies that filed Specialized Disclosure reports and Conflict Minerals Reports with the SEC. We spoke with company representatives to obtain additional perspectives. We traveled to the DRC, Burundi, and Rwanda for field work and visited and observed artisanal mining activities at three different mines. We met with a range of stakeholders, including NGOs, contractors, international organizations, and private sector representatives.⁷ We conducted the work on which this testimony is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The DRC is a vast, mineral-rich nation with an estimated population of about 75 million people and an area that is roughly one-quarter the size of the United States. Since its independence in 1960, the DRC has undergone political upheavals, including a civil war. Eastern DRC, in particular, has continued to be plagued by violence, including sexual violence against women and children, perpetrated by armed groups and some members of the Congolese national military. Some of the adjoining countries in the region have also experienced recent turmoil, which has led to flows of large numbers of refugees and internally displaced persons into the DRC.⁸ For example, the United Nations High Commissioner for Refugees (UNHCR) estimated that as of mid-2013 there were around 2.6 million internally displaced persons living in camps or with host families in the DRC.

Various industries, particularly manufacturing industries, use the four conflict minerals in a wide variety of products. For example, tin is used to solder metal pieces and is also found in food packaging, in steel coatings on automobile parts, and in some plastics. Most tantalum is used to manufacture tantalum capacitors, which enable energy storage in electronic products such as cell phones and computers, and to produce

⁷Artisanal mining is a form of mining that is characterized by a lack of mechanization or capital investment.

⁸According to the UN, internally displaced persons are people who have not crossed an international border but have moved to a different region than the one they call home within their own country to escape war, persecution, or terror.

alloy additives, which can be found in turbines in jet engines. Tungsten is used in automobile manufacturing, drill bits and cutting tools, and other industrial manufacturing tools and is the primary component of filaments in light bulbs. Gold is used as a reserve and in jewelry and is used by the electronics industry. As we have previously reported, conflict minerals are mined in various locations around the world.

Over the past decade, Congress has focused on issues related to the DRC. In 2006, Congress passed the Democratic Republic of the Congo Relief, Security, and Democracy Promotion Act of 2006, stating that U.S. policy is to engage with governments working for peace and security throughout the DRC and holding accountable any individuals, entities, and countries working to destabilize the country.⁹ In 2011, State and USAID developed the U.S. Strategy to Address the Linkages between Human Rights Abuses, Armed Groups, Mining of Conflict Minerals and Commercial Products (the strategy).

⁹Pub. L. No. 109-456, § 102(14), 120 Stat. 3384.

Company Filings in 2014 Indicate That Company Inquiries and Due Diligence Provided Limited Insights Regarding Country of Origin of Conflict Minerals Used, Citing Difficulty Obtaining Information from Suppliers

The SEC conflict minerals disclosure rule outlines a three-step process for companies to follow, as applicable, to comply with the rule. Broadly, the process falls into three steps requiring a company to (1) determine whether the rule applies to it; (2) conduct a reasonable country of origin inquiry (RCOI) concerning the origin of conflict minerals used; and (3) exercise due diligence, if appropriate, to determine the source and chain of custody of conflict minerals used. (App. II depicts SEC's flowchart summary of the rule). Of the 1,321 companies that filed conflict minerals disclosures in 2014, the sample of filings that we reviewed indicates that almost all of the companies conducted an RCOI and a majority of them exercised due diligence, but most reported that they were unable to determine the country of origin of conflict minerals they had used in 2013.¹⁰ Company representatives we interviewed cited difficulties in obtaining information from suppliers. According to our analysis, an estimated

- 67 percent reported that they were unable to determine the country of origin,
- 4 percent reported that conflict minerals came from Covered Countries,¹¹
- 24 percent reported that conflict minerals did not originate in Covered Countries,
- 2 percent reported that conflict minerals came from scrap or recycled sources, and
- 3 percent did not provide a clear determination.

According to our estimate, just about all of the companies that filed conflict minerals disclosures reported that they conducted an RCOI, with

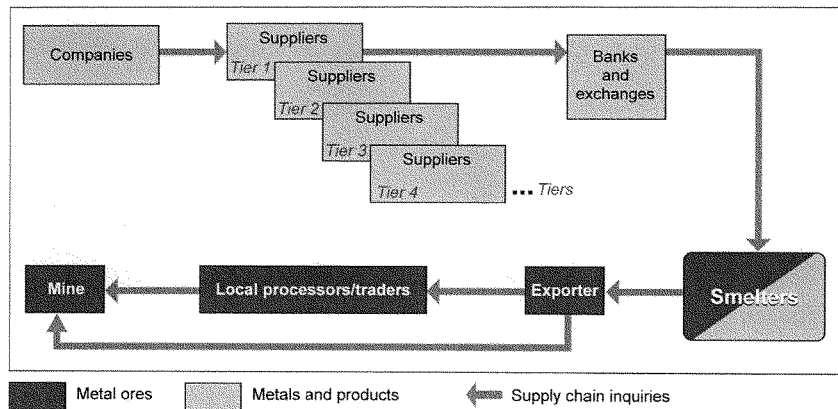
¹⁰The number of companies that filed conflict minerals disclosures in 2014—1,321—was substantially lower than SEC's estimate of 6,000 companies that could possibly be affected by the rule. In its rule proposal, SEC had estimated that approximately 6,000 companies could possibly be affected by the rule by estimating the number and types of businesses that SEC staff believed may manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of those products. According to an SEC official, this estimate was intentionally overly inclusive, was not an expectation, and was provided to satisfy the requirements of the Paperwork Reduction Act. Pub. L. No. 104-13, 109 Stat. 163 (codified at 44 U.S.C. §§ 3501-3520).

¹¹Covered Countries are the DRC and countries that share an internationally recognized border with the DRC, which included Angola, Burundi, Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia at the time that SEC issued its conflict minerals rule.

96 percent of them reporting that they conducted a survey of their suppliers to try to obtain information about whether they used conflict minerals, the country of origin of those conflict minerals, and the processor of the conflict minerals. Based on some of the filings that we reviewed and interviews with company representatives, in general, companies used a supplier survey and industry template to conduct their RCOIs. A challenge noted by representatives of some companies we spoke with was that they received incomplete information from suppliers, limiting their ability to determine the source and chain of custody of the conflict minerals they used in 2013. We should note that in a July 2013 report, we found that a company's supply chain can involve multiple tiers of suppliers.¹² As a result, a request for information from a company could go through many suppliers, as figure 1 illustrates, delaying the communication of information to the company.

¹²GAO, *SEC Conflict Minerals Rule: Information on Responsible Sourcing and Companies Affected*, GAO-13-689 (Washington, D.C.: July 18, 2013).

Figure 1: Simplified Conflict Minerals Supply Chain Showing Tiers of Suppliers



Source: GAO analysis. | GAO-16-200T

For example, as we noted in our 2013 report, companies required to report under the rule could submit the inquiries to their first-tier suppliers.¹³ Those suppliers could either provide the reporting company with sufficient information or initiate the inquiry process up the supply chain, such as by distributing the inquiries to suppliers at the next tier—tier 2 suppliers. The tier 2 suppliers could inquire up the supply chain to additional suppliers, until the inquiries arrived at the smelter. Smelters could then provide the suppliers with information about the origin of the conflict minerals. Representatives of some companies that we spoke with told us that they were making efforts to address concerns about the lack of information on the country of origin of conflict minerals they had used.

Our analysis shows that the exercise of due diligence on the source and chain of custody of conflict minerals yielded little or no additional

¹³Ibid.

information, beyond the RCOI, regarding the country of origin of conflict minerals or whether the conflict minerals that companies used in 2013 in their products benefited or financed armed groups in the Covered Countries. The estimated 4 percent of the companies who determined that the necessary conflict minerals used in their products originated from Covered Countries could not determine whether such conflict minerals financed or benefitted armed groups during the reporting period, even though they disclosed that they conducted due diligence on the source and chain of custody of conflict minerals they used.

State and USAID
Actions to Implement
the U.S. Conflict
Minerals Strategy
Have Yielded Some
Results, but
Conditions Remain
Difficult

State and USAID Are
Taking Action to
Implement Strategy
Objectives

State and USAID officials reported that they are implementing the U.S. conflict minerals strategy they submitted to Congress in 2011 through specific actions that address the strategy's five key objectives. Both State and USAID officials in Washington and the region reiterated that the strategy and its five key objectives remain relevant. The following summarizes our findings about each objective:

- *Promote an Appropriate Role for Security Forces (Objective 1).* Some of the reported actions being undertaken by the International Organization for Migration (IOM), a USAID implementing partner, are helping to lessen the involvement of the military and increasing the role of legitimate DRC government stakeholders in mining areas. For example, USAID reported that IOM has assisted with the planning and demilitarization of mine sites in eastern DRC through leading a multi-sector stakeholder process of mine validation to ensure that armed groups and criminal elements of the Congolese military are not active in eastern DRC mines. As we previously reported, according to UN,

Traceability Mechanisms

Traceability mechanisms may minimize the risk that minerals that have been exploited by illegal armed groups will enter the supply chain and may also support companies' efforts to identify the source of the conflict minerals across the supply chain around the world. Such mechanisms in the Democratic Republic of the Congo and adjoining countries focus on tracing minerals from the mine to the mineral smelter or refiner by supporting a bagging and tagging program or some type of traceability scheme.

Source: GAO | GAO-16-200T

U.S., and foreign officials and NGO representatives, some members of the Congolese national military units are consistently and directly involved in human rights abuses against the civilian population in eastern DRC and are involved in the exploitation of conflict minerals and other trades.

- Enhance Civilian Regulation of the DRC Minerals Trade (Objective 2).* USAID reported that it is undertaking a number of actions, through implementing partners, to enhance civilian regulation and traceability of the DRC minerals trade. For example, USAID reported funding TetraTech, a technical services company, to (1) build the capacity for responsible minerals trade in the DRC, (2) strengthen the capacity of key actors in the conflict minerals supply chain, and (3) advance artisanal and mining rights. In addition, USAID indicated that it is funding IOM to support DRC infrastructure and regulatory reform. According to an IOM official we spoke with in the region, IOM also provides the DRC government with information on which mines should be suspended from the conflict-free supply chain based on safety and human rights violations. During our visit to the region, we met with a USAID official and representatives of local human rights organizations who told us that the implementation of traceability schemes is contributing to positive outcomes. For example, in some cases, according to USAID, local miners earn double the price for certified conflict-free minerals compared to non-certified illegal minerals, which is more than they would earn from smuggling (see app. III, figs. 1 and 2).
- Protect Artisanal Miners and Local Communities (Objective 3).* State and USAID reported several programs through their implementing partners, aimed at protecting artisanal miners and local communities and providing alternative livelihoods. For example, State reported that it funded an implementing partner for anti-human-trafficking initiatives as well as to promote alternative livelihoods and improve workers' rights in the artisanal mining sector. According to State, these efforts aimed to reduce the vulnerability of men and women in local communities. In addition, USAID has funded an implementing partner to promote community conflict mitigation and conflict minerals monitoring structures at local levels. According to USAID, artisanal mining provides survival incomes to Congolese throughout the country but it is particularly significant in eastern DRC, where roughly 500,000 people directly depend on artisanal mining for their income. These miners work under very difficult safety, health, and

security conditions and almost always within an illicit environment. Moreover, as we observed during our visits to the mines in the region, artisanal mining is a physically demanding activity requiring the use of rudimentary techniques and little or no industrial capacity (see app. III, figs. 3 and 4).

- *Strengthening Regional and International Efforts (Objective 4).* U.S. diplomatic and capacity building initiatives have reportedly helped strengthen international efforts. For example, USAID said it is working with TetraTech to build the capacity of the International Conference on the Great Lakes Region (ICGLR), an intergovernmental organization. According to USAID, this effort supports the implementation and coordination of regional countries' efforts to promote monitoring, certification, and traceability of mine sites. A TetraTech representative we met with in the region told us that TetraTech is also organizing workshops for educating and raising awareness about regional certification in ICGLR countries.¹⁴ According to officials we interviewed from the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) and the ICGLR, as well as local officials, U.S. diplomacy has increased awareness about conflict minerals and improved coordination in the region. Some of these officials described State and USAID actions to strengthen regional and international efforts as the most effective in the region.
- *Promote Due Diligence and Responsible Trade through Public Outreach (Objective 5).* State and USAID reported engaging in various efforts to reach out to industry associations, NGOs, international organizations, and regional entities to help promote due diligence and responsible trade in conflict minerals. For example, State and USAID reported that they leveraged private sector interest to establish the Public-Private Alliance for Responsible Minerals Trade to support supply chain solutions to conflict minerals challenges in the region. The alliance includes State, USAID, and representatives from U.S. end-user companies, industry associations, NGOs, and ICGLR, among others. In

¹⁴ICGLR is composed of twelve member states: Angola, Burundi, Central African Republic, the Republic of the Congo, the DRC, Kenya, Uganda, Rwanda, South Sudan, Sudan, Tanzania, and Zambia.

addition, State is engaged with the Conflict-Free Sourcing Initiative (CFSI) and State and USAID both participate in the biannual Organization for Economic Co-operation and Development, UN Group of Experts (UNGOE), and ICGLR forums. According to State and USAID officials, these efforts promote continued engagement with industry officials and civil society groups and encourage due diligence and strengthening of conflict-free supply chains. A USAID official in the region told us that teams of private sector executives, hosted by State and USAID officials, have visited eastern DRC and Rwanda mining sites on several occasions, reinforcing the executives' commitment to source minerals responsibly. In addition, a State official noted that some private companies have been active in providing feedback on certification and traceability mechanisms.

**State and USAID Face
Difficult Conditions in
Implementing the U.S.
Conflict Minerals Strategy**

Although State and USAID officials provided some examples of results associated with their actions, the agencies face difficult operating conditions that complicate efforts to address the connection between human rights abuses, armed groups, and the mining of conflict minerals. We have described some of these challenges in our previous reports but, as we observed during our fall 2014 visit to the region, numerous challenges continue to exist. First, the mining areas in eastern DRC continue to be plagued by insecurity because of the presence and activities of illegal armed groups and some corrupt members of the national military. In 2010, we reported extensively on the presence of illegal armed groups, such as the Democratic Forces for the Liberation of Rwanda or Forces Democratiques de Liberation du Ruwanda, and some members of the Congolese military and the various ways in which they were involved in the exploitation of the conflict minerals sector in eastern DRC.¹⁵ In 2013, the Peace and Security Cooperation Framework signed by 11 regional countries noted that eastern DRC has continued to suffer from recurring cycles of conflict and persistent violence.¹⁶ Although U.S. agency and Congolese officials informed us during our recent fieldwork in the region that a large number of mines had become free of armed

¹⁵See GAO-10-1030.

¹⁶*Peace, Security and Cooperation Framework for the Democratic Republic of the Congo and the Region*, signed in Addis Ababa (Feb. 24, 2013).

groups (referred to as green mines).¹⁷ MONUSCO officials we met with in the DRC also told us that armed groups and some members of the Congolese military were still active in other mining areas. Specifically, MONUSCO officials described two fundamental ways in which armed groups continued to be involved in conflict minerals activities: directly, by threatening and perpetrating violence against miners to confiscate minerals from them; and indirectly, by setting up checkpoints on trade routes to illegally tax miners and traders. As we noted in our 2010 report, U.S. agency and UN officials and others believe that the minerals trade in the DRC cannot be effectively monitored, regulated, or controlled as long as armed groups and some members of the Congolese national military continue to commit human rights violations and exploit the local population at will.¹⁸

As we reported in 2010, U.S. government officials and others indicated that weak governance and lack of state authority in eastern DRC constitute a significant challenge. As we noted then, according to UN officials, if Congolese military units are withdrawn from mine sites, civilian DRC officials will need to monitor, regulate, and control the minerals trade. We also noted that effective oversight of the minerals sector would not occur if civilian officials in eastern DRC continued to be underpaid or not paid at all, as such conditions easily lead to corruption and lack of necessary skills to perform their duties. Evidence shows that this situation has not changed much. U.S. agencies and an implementing partner, as well as some Congolese officials, told us that there are not enough trained civilians to effectively monitor and take control of the mining sector. ICGLR officials we met with highlighted the importance of a regional approach to addressing conflict minerals and indicated that governments' capacity for and interest in participating in regional certification schemes varies substantially, making it difficult to implement credible, common standards. Corruption continues to be a challenge in the mining sector. For example, a member of the UN Group of Experts told us that smuggling remains prolific and that instances of fraud call into question the integrity of traceability mechanisms. This official stated that tags used to certify minerals as conflict-free are easily obtained and sometimes sold illegally in the black market. According to USAID officials,

¹⁷For our August 2015 report, we traveled to a tantalum mine in eastern DRC, which would have been impossible in 2010 during our last visit to the region, because of security concerns at that time.

¹⁸See GAO-10-1030.

USAID is working to introduce a pilot traceability system to increase transparency, accountability, and competition in the legal artisanal mining sector. According to U.S. government officials and officials from local and civil society in the region that we met with, lack of state authority bolsters armed group activity and precludes public trust in the government.

Poor infrastructure, including poorly maintained or nonexistent roads, makes it difficult for mining police and other authorities to travel in the region and monitor mines for illegal armed group activity. In our 2010 report, we reported that the minerals trade cannot be effectively monitored, regulated, and controlled unless civilian DRC officials, representatives from international organizations, and others can readily access mining sites to check on the enforcement of laws and regulations and to ensure visibility and transparency at the sites.¹⁹ As shown by the photograph in app. III, fig. 5, during our recent visit to the region, poor road conditions made travel to the mines very challenging.

Chairman Huizenga, Ranking Member Moore, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Kimberly Gianopoulos, Director, International Affairs and Trade, at (202) 512-8612 or GianopoulosK@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. GAO staff who made key contributions to this testimony are Godwin Agbara (Assistant Director), Marc Castellano (Analyst-in-Charge), Jeffrey Baldwin-Bott, Debbie Chung, Stephanie Heiken, Andrew Kurtzman, Grace Lui, and Jasmine Senior.

¹⁹GAO-10-1030.

Appendix I: Related GAO Products

SEC Conflict Minerals Rule: Initial Disclosures Indicate Most Companies Were Unable to Determine the Source of Their Conflict Minerals.
GAO-15-561. Washington, D.C.: August 18, 2015.

Conflict Minerals: Stakeholder Options for Responsible Sourcing Are Expanding, but More Information on Smelters Is Needed. GAO-14-575.
Washington, D.C.: June 26, 2014.

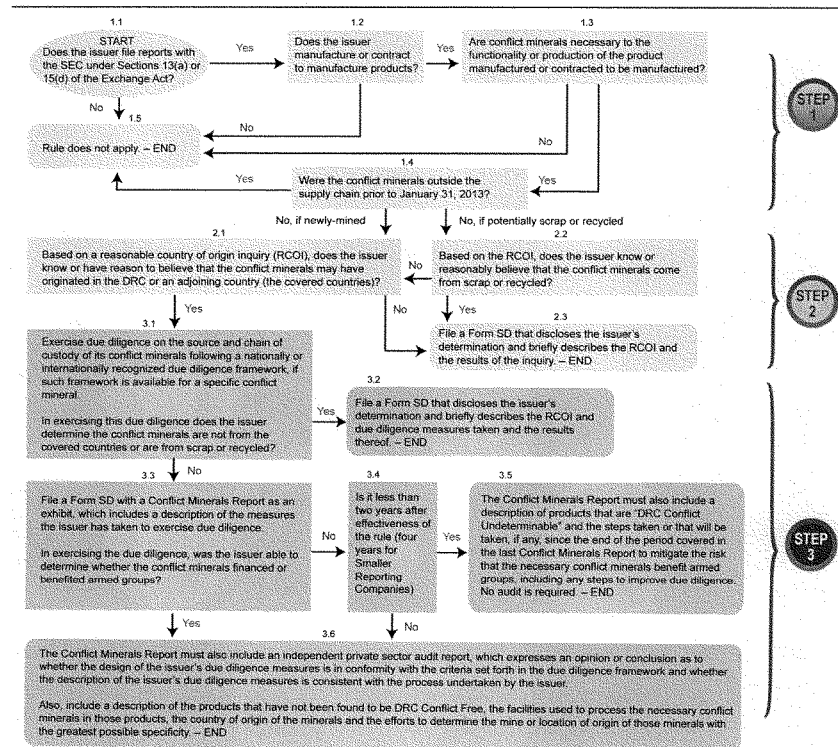
SEC Conflict Minerals Rule: Information on Responsible Sourcing and Companies Affected. GAO-13-689. Washington D.C.: July 18, 2013.

Conflict Minerals Disclosure Rule: SEC's Actions and Stakeholder-Developed Initiatives. GAO-12-763. Washington, D.C.: July 16, 2012.

The Democratic Republic of Congo: Information on the Rate of Sexual Violence in War-Torn Eastern DRC and Adjoining Countries.
GAO-11-702. Washington, D.C.: July 13, 2011.

The Democratic Republic of the Congo: U.S. Agencies Should Take Further Action to Contribute to the Effective Regulation and Control of the Minerals Trade in Eastern Democratic Republic of the Congo.
GAO-10-1030. Washington, D.C.: September 30, 2010.

Appendix II: SEC Flowchart Summary of the Conflict Minerals Disclosure Rule



Source: Securities and Exchange Commission (SEC). | GAO-16-2007

Appendix III: Photographs from GAO Fieldwork

We took the following photographs in the Democratic Republic of the Congo, Burundi, and Rwanda during fieldwork for our August 2015 report.

Figure 1: A Bag of Tantalum Ore Being Prepared for Tagging (a Method to Trace Origin) and Export at a Mine in the Democratic Republic of the Congo



Source: GAO. | GAO-16-200T

Figure 2: A Bag of Tin Ore Tagged for Export at a Mine in Rwanda

Source: GAO. | GAO-16-200T

Figure 3: Artisanal Miners at a Tantalum Mine in the Democratic Republic of the Congo

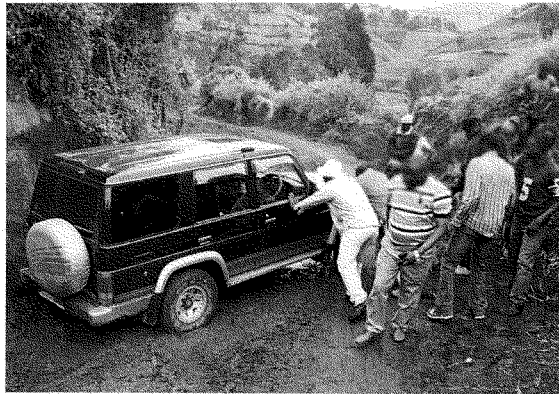


Source: GAO. | GAO-16-200T

Figure 4: Artisanal Miners at a Gold Mine in Burundi

Source: GAO. | GAO-16-200T

Figure 5: Stuck Vehicle during a Visit by GAO Team to a Mine Site in the Eastern Part of the Democratic Republic of the Congo, November 2014



Source: GAO. | GAO-16-200T

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TESTIMONY OF
Evode Imena, Minister of State
In charge of Mining, Ministry of Natural Resources
Government of the Republic of Rwanda
Before the U.S. House Financial Services Committee, Monetary Policy and
Trade Subcommittee

**“Dodd-Frank Five Years Later: What Have We Learned from Conflict
Minerals Reporting?”**

November 17, 2015

INTRODUCTION

Thank you, Chairman Huizenga, Ranking Member Moore, and Members of the Subcommittee for inviting me here today. Thank you for holding this important hearing to discuss what we have learned from implementing Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. I am honored to testify on behalf of the United States' friend and ally, the Republic of Rwanda.

CURRENT STATE OF AFFAIRS IN RWANDA

I want to first set the stage and talk a little bit about my country today. Rwanda has enjoyed significant political stability since emerging from the 1994 genocide. According to the World Economic Forum's Global Competitiveness Report released in July 2015¹, Rwanda is the most efficiently governed country in Africa and seventh globally. Rwanda is also among the five least corrupt nations in Africa according to Transparency International.²

Additionally, Rwanda has one of the fastest growing economies in the world, registering an average growth rate of eight percent³ for the last 13 years. The World Bank has stated that Government reforms have directly resulted in Rwanda's having the most improved economy worldwide since 2005, and the country is the second easiest place to do business in Africa.⁴ The factors used to determine these rankings are: cutting wasteful government spending; relaxing or removing regulatory burdens; and increasing transparency of policy-making.

Rwanda has come a long way, and we are strategically planning for the future to ensure we continue on the path of progress.

Rwanda's long-term development goals are defined in a strategy entitled Vision 2020.⁵ This framework's goal is to transform the country from a low-income agriculture-based economy to a knowledge-based, service-oriented, manufacturing economy with a middle-income country status by 2020. The mining sector has been identified as a key priority as we work to achieve this next step in our economic evolution.

RWANDA'S MINERAL RESOURCES & IMPACT ON ECONOMY

To understand how critical Rwanda's mineral resources could be in Rwanda's continued transformation, it is important to understand a little bit about the resources within our borders and the significant role mining plays in our economy.

¹ 2014-2015 World Economic Forum's annual Global Competitiveness Report, <https://agenda.weforum.org/2015/07/efficient-government/>

² Transparency International's 2014 Corruption Perception Index (CPI), <https://www.transparency.org/cpi2014/results#myAnchor1>

³ Figures from the Ministry of Finance and Economic Planning & National Institute of Statistics of Rwanda

⁴ World Bank Doing Business 2014 report, <https://openknowledge.worldbank.org/handle/10986/16204>

⁵ <http://edprs.rw/content/vision-2020>

Rwanda is located in the geological area known as the Kibaran belt, which has rich deposits of tin, tungsten, and tantalum, also known as the “3T minerals.” The Kibaran belt entirely covers Rwanda, as well as large parts of the Kivu region of the Democratic Republic of Congo (DRC), which borders Rwanda to the west. Parts of Burundi, Tanzania, and Uganda are also overlaid by sections of the Kibaran belt.

While tin is abundant around the world, tungsten and tantalum are significantly more rare. Tungsten has a high melting point and is one of the strongest substances known to mankind. It is often alloyed with other metals to strengthen them, and has a wide variety of applications critical to modern economies from circular saws to electrodes.

Rwanda produces an annual average of 1,500 tons of tungsten ore⁶, and the African Great Lakes region, of which we are a part, has been responsible for about two percent⁷ of the world’s tungsten supply in recent years. Nearly 80 percent⁸ of the world’s tungsten supply is generated by China, followed by Russia and then Canada.

In 2014, the US Geological Survey credited Rwanda, DRC, and Burundi with producing more than 50 percent⁹ of the world’s tantalum raw ore. Tantalum derivatives are used in a wide variety of products, including medical equipment and prosthetics, global positioning systems, computers, hard drives, cell phones, and most other sophisticated electronics.

Mining accounts for two percent of Rwanda’s GDP, 28 percent of national exports, and is the second greatest source of foreign exchange just after tourism.¹⁰ The mining industry employs more than 37,000 people.

A 2014 survey¹¹ indicates that on average, each miner has another four dependents, meaning that the work of the approximately 37,000 miners in the country supports the livelihood of 170,000 individuals – about 1.5 percent of the population of Rwanda. The monthly income for a miner varies significantly, and can be as high as \$600 per month with median incomes of about \$85 per month, putting them in what the US would call middle class. For comparison, the average salary for a primary school teacher in public school in Rwanda is about \$90 per month, and the salary for a junior staff member in a government agency is about \$400 per month.

⁶ Statistics from the National Bank of Rwanda and the Ministry of Natural Resources

⁷ US Geological Survey – Mineral Commodity Summaries 2015

⁸ Ibid.

⁹ Ibid.

¹⁰ Annual report of National Institute of Statistics of Rwanda

¹¹ Statistics from the Ministry of Natural Resources

Currently, the 3Ts still account for more than 90 percent¹² of Rwanda's mineral production. However, we have started to diversify our extraction efforts to other resources, including gemstones like sapphire, tourmaline, and amethyst, as well as gold and iron ore. We are also exploring for additional minerals including copper, cobalt, silver, rare earth elements, lead, and zinc.

Our mining industry is currently led by the Ministry of Natural Resources and the Geology and Mines Department (GMD). The Ministry has responsibility for setting policy and preparing legislation, overseeing the whole industry, and monitoring and evaluation. GMD has responsibility for policy implementation; promoting, regulating, and supervising the industry; and compiling and disseminating data.

Mines are operated by private companies and cooperatives licensed by the Ministry. All the mining operators are grouped under an umbrella organization known as the Rwanda Mining Association.

IMPLEMENTATION OF BEST PRACTICES

Now I would like to discuss the steps Rwanda has taken to implement best practices in our mining industry, which illustrate our leadership domestically and internationally.

Recognizing the growing problems posed by trafficking and smuggling minerals, nearly a decade ago, Rwanda proactively developed the regulatory and physical infrastructure needed to continue to develop and legitimize our mining industry.

In 2006, four years before the passage of Dodd-Frank, the Government initiated a project to collect an analytical fingerprint of deposits containing 3T minerals. In 2008, two years prior to the enactment of Dodd-Frank, the Ministry of Natural Resources initiated the Certified Trading Chains (CTC) system in collaboration with the German Mineral Resources Agency (BGR).

The CTC system was based on international integrity instruments such as guidance from the Organisation for Economic Cooperation and Development (OECD), and focused on two aspects: supply chain due diligence (origin of minerals and traceability, taxation and transparency), and mining conditions (workers' rights, communities and environment). The CTC was piloted at six mines in Rwanda, but when Dodd-Frank was enacted in 2010, the Government and industry shifted their focus to compliance with Section 1502 of the law, implementing mandatory regulations rather than a voluntary system.

In 2010, the Government signed a memorandum of understanding with the International Tin Resource Institute (ITRI). ITRI is a London-based industry organization funded by tin producers

¹² Statistics from the Ministry of Natural Resources

to represent the interests of the tin industry globally. The agreement was signed with the objective to address issues relating to 3T mining in Rwanda in relation to “conflict minerals” regulations. The aim of the project was to improve due diligence, governance and traceability of 3T in order to reassure metal buyers of the provenance of their minerals by using the ITRI Supply Chain Initiative (iTSCi), the system devised by ITRI.

The iTSCi program was officially started in Rwanda in 2011. The Government works with PACT, a Washington DC based NGO, as an independent verifier to implement the iTSCi traceability mechanism.

PACT plays an important role in building capacity and training small-scale miners, performing field investigations, auditing, and reporting on all due diligence aspects of iTSCi. A national steering committee composed of the Government, PACT, and civil society organizations oversees the program and recommends actions to the Ministry.

In March 2012, Rwanda was the first country in the African Great Lakes region to promulgate regulations on the International Conference for the Great Lakes Region (ICGLR) Mineral Certification Mechanism (RCM). ICGLR Certification is based on the OECD due diligence guidelines. In November 2013, Rwanda was the first country in the region to issue an ICGLR mineral certificate to a shipment of 3Ts destined for export.

In May 2014, the Rwanda Parliament passed a new mining code, codifying revised mining policy aimed at professionalizing and modernizing the Rwandan mining industry. One of the pillars of the policy is the transformation of the sector from artisanal and small-scale operations to semi-industrial and industrial mining operations.

This transformation requires technical knowledge and skills, financial capacity, proper planning, and an enabling environment. In this framework, the Ministry organized small mining cooperatives into a Federation (FECOMIRWA) and developed a revolving fund to enable artisanal miners to access loans. Other entrepreneurs and relatively larger companies were grouped into the Rwanda Mining Association, which serves as a forum for advocacy, building capacity, and sharing experience.

We recognize that there have been past cases of illegal transportation and trade of minerals from neighboring countries to Rwanda. With the above noted policies and practices in place, Rwanda has the capacity for robust enforcement against smuggling and trafficking of minerals, and takes enforcement very seriously. The Government has implemented the Regional Initiative against Illegal exploitation of Natural Resources (RINR), a strong mechanism to curb mineral smuggling.

In April 2015, a regional team was formed to assist in formulating and receiving requests for cooperation and mutual assistance in the fight against mineral fraud and smuggling. Member states of the ICGLR are represented in the team.

Whenever there is evidence of misconduct by any mineral license holder in Rwanda, immediate actions are taken by the Government. For example, in September 2015, a cooperative named Kamico allegedly misused tags dedicated for traceability, and its license was suspended. Upon determining that the allegations could be substantiated, the license was cancelled.

In October 2015, 54 companies that were not complying with legal requirements were excluded from the mineral traceability scheme. Three companies – namely RF & GM, Africa Multi-business Line, and SOMIKA – named in the UN Group of Experts on the DRC report of October 16, 2015, are also among companies excluded from the traceability scheme, and are thus prohibited from participating in extraction, processing, transportation, or selling 3T minerals.¹³

Because of the actions the Government has taken, today there is really a *de minimis* financial benefit in cross-border smuggling in Rwanda. Anyone tempted to smuggle minerals into Rwanda for the purpose of selling them would need to pay 15 percent of the value of minerals as withholding tax, four percent as royalty tax, and transportation costs. If the minerals are illegally introduced in the traceability scheme, they would also need to pay the iTCSi levy and Government fees.

In total, anyone attempting to illegally sell minerals by introducing them into the Rwanda supply chain would be subject to fees and payments ranging between 20 to 24 percent of the value of the smuggled minerals. In a business where profit margins are generally tight, we do not see much incentive for smuggling products through Rwanda at a cost of up to 24 percent.

IMPACT OF SECTION 1502

As you can see, Rwanda has taken extensive steps and made great strides in improving accountability and transparency in the mineral supply chain. Today, Rwanda is the country with the best mineral traceability system in the region. Currently, 100 percent of 3T minerals mined in Rwanda are traceable from the mine site to the export point, and a modern database exists with information on mining operations, production records, and mineral trading transactions. Despite all that has been accomplished, our efforts to improve are hampered by the fact that Rwanda was lumped together with nine other countries in Section 1502 of Dodd-Frank.

The ten countries covered by this law certainly have some things in common, but they are dissimilar in many significant ways. From economic development to border control, these

¹³ United Nations Midterm Report of the Group of Experts on the Democratic Republic of the Congo, October 16, 2015

countries are at all different levels of achievement. Putting them in one group and applying a “one size fits all” regulation is not only an impediment to efficient implementation of the regulations, but further, such an approach fails to recognize efforts made and challenges faced by individual countries.

Today, the Rwandan mining sector bears the direct costs resulting from the conflict mineral due diligence framework. Due diligence costs include an ITRI levy and fees paid to the Government. All levies are collected at the export stage based on export volumes and essentially serve to finance the mineral traceability scheme in Rwanda. There are additional due diligence costs, including the iTSCI joining and membership fees, as well as internal due diligence costs, such as record keeping and internal audits.

Due diligence fees are directly paid either by large-scale mining companies or by Rwandan mineral exporters, and they in turn pass on the levies to small-scale and artisanal miners who supply the minerals.

The cost of due diligence for the three years prior to 2015 were between two and four percent¹⁴ of the export value of 3T minerals. However, because due diligence costs are not contingent upon mineral prices, but depend on produced volumes, the decline in mineral prices has increased due diligence costs to 5.7 percent¹⁵ of the tungsten ore value, 3.7 percent of the tin ore value, and 3.5 percent of the tantalum ore value.

Currently, more money is spent complying with the conflict mineral requirements than money paid for Government taxes. In October 2015, Rwanda tungsten miners paid \$12,000 for each container in due diligence costs in comparison to \$8,330 paid for royalty tax.¹⁶ Between January and August 2015, \$3.2 million¹⁷ was spent on due diligence – four percent of the value of minerals produced.

Despite all these efforts and the costly investments in due diligence, we have noted since 2013 a negative international market bias against Rwandan minerals, and in particular against tungsten, as Dodd-Frank has been fully implemented. This situation worsened in 2014, when companies that process tungsten ore stopped buying from all Central African countries – despite the fact that Rwanda was fully implementing both OECD due diligence recommendations related to conflict minerals and the ITRI minerals traceability mechanism.

The region is now suffering from an “Africa-free” and not a “conflict-free” minerals situation. Section 1502 has caused a de-facto boycott by companies in the US and much of Europe on our

¹⁴ Statistics from the Ministry of Natural Resources

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Statistics from Rwandan mining companies and the Ministry of Natural Resources

most valuable resources. The result is a very limited customer base, which further drives down mineral prices because these customers know they have no competition for our resources.

The situation has largely impacted the livelihood of thousands of miners and their families, as the costs for due diligence are passed down from mineral exporters to mining companies, and then on to mine workers. Based on our calculation, the revenues for mining companies and wages for mine workers have decreased by 3 to 6 percent in the last year. Coupled with price fluctuation, the situation has become very difficult to miners and to an industry with tight profit margins.

During the fiscal year 2014/2015, the Ministry of Natural Resources – which has several departments beyond mining – had a budget of \$19.8 million. Approximately \$3.7 million was dedicated to mining sector development, including mineral exploration. Approximately \$6.1 million was spent to comply with due diligence requirements, 46 percent more than was used to discover more mineral resources for the people of Rwanda and for modernization of existing mines. And still, because of Section 1502, our minerals are effectively excluded from the world market.

In 2010, when Dodd-Frank was introduced, Rwandan 3Ts mineral production was estimated at \$68 million. It grew by 208 percent to reach \$210 million in 2014. While this growth is very impressive, it is dwarfed by the 1,260 percent growth registered between 1998 and 2010, before the enactment of Dodd-Frank.¹⁸ While the difference between growth rates cannot be explained solely by the negative impact of the conflict mineral regulations, these regulations have clearly had a significant negative impact.

I must note that a number of positive developments were triggered by the introduction of Dodd-Frank, including: better record-keeping and reporting from mining companies, improvements in mine site inspections, increased monitoring of mining activities by government agents, capacity building of small-scale and artisanal miners, and alignment of national regulations to regional and global best practices.

These positive gains are among the reasons the Ministry in charge of mines decided that regardless of what might happen with Section 1502, Rwanda will continue to encourage robust traceability for tax and regulatory purposes. Moreover, sustainability, certification, and traceability are here to stay, and Rwanda will continue to be a reliable partner because we know that only “well-sourced” materials will attract the highest yield on the world market.

CHALLENGES AND OPPORTUNITIES

As illustrated above, many of the main challenges to our industry revolve around the limitations the de facto Dodd-Frank boycott has put on our potential for growth and increased revenue.

¹⁸ Figures from annual report of the National Institute of Statistics of Rwanda

A major structural challenge is caused by the fact that 3T minerals are only mined in four of the 10 countries covered by Section 1502, so the engagement and contribution to efforts for a regional solution through the ICGLR on 3Ts would not attract the attention of all members. With less than half of the ICGLR countries affected, why should they expend political capital and professional time and talent in seeking a solution?

A continuing challenge is the cost of the iTSCi system, and the opacity around the use of levies from local miners. While the system has improved the mining sector by ensuring traceability, the system is costly and it is unclear what the levies are used for within ITRI or why they are so high.

Another issue is based on the fact that 10 countries with divergent interests and different needs are all put in the same box under the current enforcement regime. African Great Lakes countries have initiated the ICGLR regional certification mechanism to deal with various issues related to mining development. However, the mechanism faces several challenges, which has resulted in limited achievements compared to expected outcomes.

Some of the challenges are linked to the limited capacity of the ICGLR and its unit in charge of mineral resources, which depends on donations. That being the case, prioritization of projects does not solely depend on the needs of member states, but on wishes of donors.

Plans for auto-financing of the ICGLR have not yet been successful, so the system lacks the financial stability to be effective in the long term. Issues related to mineral resources in the Great Lakes region are most of the time reduced only to “conflict minerals,” which has created confusion among various stakeholders and takes away countries that are not concerned about 3T minerals, further hampering efforts to develop an effective funding mechanism.

We do see many opportunities for growth, and the Ministry in charge of mining will continue to take proactive steps. We are currently missing out on investment from a whole host of socially responsible private US companies. We are not asking for any US government handout, but we would like to create an environment that encourages public-private partnerships with US companies to help us with extraction, surveying and mapping, refining and processing, logistics and transportation, and worker training and professional development.

We feel that encouraging US investment will help us fill gaps in our supply chain, increase end-user consumer confidence in our raw materials, improve our economy, and get the most out of our existing infrastructure. For example, Rwanda has a tin smelter that needs modernization. The smelter has undertaken steps to be certified as conflict-free smelter, and additional foreign

investment could greatly improve the smelter's capacity. The Ministry has also received proposals for projects from mining companies to set up tantalum and tungsten refineries.

Today, systems exist that can produce what I will call a geologic finger print of a particular mining site, essentially identifying minerals by their mine of origin. Foreign investment could help us deploy these systems in Rwanda, further adding to the integrity of our traceability systems and increasing confidence in the world market.

CONCLUSION

Moving forward – we welcome a discussion about ways that we could partner with US industry, academic institutions, and the US Government to identify future growth strategies and improve implementation of Dodd-Frank.

Our Government is open to programs and systems that will encourage US manufacturers to source materials from Rwanda and our neighbors.

I welcome your questions and thank you again for inviting me to participate today.

The Hon. Per-Olof Loof
Chief Executive Officer
KEMET Electronics Corporation

Before the House Financial Services Monetary Policy and Trade
Subcommittee
United States House of Representatives
**Dodd-Frank Five Years Later: What Have We Learned from Conflict
Minerals Reporting**
November 17, 2015
2128 Rayburn House Office Building

A Silver lining to the Dodd-Frank Act

Thank you, Chairman Huizenga, Ranking Member Moore, and Members of the subcommittee for holding this hearing on the impact of Dodd-Frank's Conflict Minerals Provision. My name is Per Loof, I am the CEO of KEMET Corporation and Chairman of NEC TOKIN, our joint venture with NEC.

KEMET is a leading global supplier of electronic components. Founded in 1919, we manufacture the broadest selection of capacitor technologies in the industry. Through our Joint venture we also offer electromechanical and electromagnetic devices as well as supercapacitors.

Capacitors store, filter and regulate electrical energy in just about anything that plugs in, has an on-off switch or uses a battery. According to our estimates each of you own more than 15000 capacitors.

We serve the military, automotive, industrial, telecommunication, computer, medical, and consumer markets.

Including our joint venture we employ 17000 people have a total of 28 manufacturing facilities. We are listed on the NYSE.

Tantalum capacitors have been a key product for us since 1958, after Bell labs invented the solid state capacitor in the mid-fifties. Today about 46% of KEMET's revenue originates from Tantalum capacitors. Tantalum ore is one area where the Democratic Republic of Congo (DRC) can be a world leader.

This is due to the fundamental chemical nature of the tantalum molecule, and the form in which it typically exists in the DRC. Simply put, it is easier to get to and the tantalum density is significantly higher.

Tantalum powder is our single largest material cost item. Acquiring tantalum at stable and competitive prices is paramount. This has always been a bit of a struggle but during the global recession in 2008 and 2009 it became a real issue. Powder suppliers kept raising prices seemingly unaware of the world around them. We had to figure something out. The DRC was not, at the time, an option.

Already in the 90ies, as things became difficult in the DRC due to conflicts, customers did not want products with raw materials originating from the DRC– some even said that they did not want “blood tantalum” capacitors.

The industry can procure ore from other locations and we did of course, mainly from China. But we all knew that the DRC enjoys the most cost competitive source.

When the Dodd-Frank Act passed, I sensed a business opportunity. Section 1502 could be the impetus for developing, in the DRC, an innovative and socially sustainable source for conflict-free tantalum ore.

We got going in 2011, after my first visit to the village in February that year. To realize this vision, we formed “The Partnership for Social and Economic Sustainability”. The objective was a vertically integrated, closed-pipe, sustainable sourcing model.

First we helped create an industrial conflict free mine in the DRC. The mine is operated according to a special agreement between KEMET, our mining partner MMR and the people of the mining town of Kisengo.

Second we had to get really serious about logistics. Kisengo in northern Katanga to Kalemie on the shores of Lake Tanganyika is a real trip.

Third we built an ore processing facility in Matamoros, Mexico

Fourth we bought a tantalum powder production Company in Carson City, Nevada.

All of our facilities have been audited and validated as compliant with the Conflict-Free Smelter Program of the Electronic Industry Citizenship Coalition and the Global e-Sustainability Initiative. The total KEMET investment to date is in excess of \$110 million.

Our closed pipe process ensures that there is no tantalum from non-conflict-free sources. In addition, we believe, our investment has reduced the extreme fluctuation in ore and powder pricing in our former supply model. Being one of the largest tantalum users in the world, I believe our initiative has stabilized the pricing of this material benefitting not just KEMET but the industry at large.

While some argue that miners in the DRC have been negatively impacted by Dodd-Frank, I can say with certainty that this is not the case with our initiative, and in our little village.

Our investments have resulted in:

- An industrial mine, also making it safer for the workers;
- A new hospital for the people of Kisengo - treated over 14,000 cases in the last 16 months;
- A new school - 1,500 students
- Access to clean water and according to the folks in the village, have eradicated cholera;
- Helped start a few local businesses supporting the mine, the school and the hospital;
- Installed solar powered street lights; and
- Refurbished basic infrastructure.

The business value is clear. And the economic benefit to KEMET is multiples of what we have invested in the village to improve the life of the miners and their families. The annual run rate benefit to KEMET is now at \$56 million. We were able to secure 86 jobs in NV and over 200 jobs in SC. We have shown that it is possible to succeed in business while being economically and socially responsible.

As strange as it may sound Section 1502 has been very good for the tantalum industry. There is now little question on provenance and there is a

clear road map how to ethically source DRC tantalum. Section 1502 may not be perfect, but The Dodd-Frank Act has certainly helped companies like KEMET to again, after decades of absence, be able embrace the DRC allowing us to develop a competitive and secure supply chain, improving both our competitiveness and the life of the people in the village.

I know we at KEMET cannot solve all the problems in the DRC, but I do believe that we have had and will continue to have a positive impact on this little village. A village that you can't even find on a map.

Thank you for allowing me to testify. I will be happy to answer any of your questions.

**Written Statement of Jeff Schwartz, Professor of Law,
University of Utah S.J. Quinney College of Law**

**Before the Subcommittee on Monetary Policy and Trade
of the Committee on Financial Services
of the United States House of Representatives**

**Hearing Titled
“Dodd-Frank Five Years Later:
What Have We Learned from Conflict Minerals Reporting?”**

November 17, 2015

Chairman Huizenga, Ranking Member Moore, and members of the Subcommittee, thank you for the opportunity to appear before you today. It is an honor and a privilege to be here. I am a Professor of Law at the University of Utah S.J. Quinney College of Law, and have written extensively about securities regulation and related topics.

Recently, I conducted an empirical study of compliance with Section 1502 of Dodd-Frank and the SEC regulations adopted thereunder (the “Conflict Minerals Rule” or the “Rule”).¹ Today, I would like to share with the Subcommittee the primary findings of that study and several policy recommendations that stem therefrom (the full study is attached as Appendix A). Overall, I conclude that the Conflict Minerals Rule is a failure in its current form, because the filings that companies have submitted to the SEC in response do not provide sufficient insight into conflict mineral supply chains, or company due diligence efforts related thereto, for consumers and shareholders to discern which companies are committed to conflict-free sourcing.² I suggest, however, that amendments to the Rule (some of them relatively minor), or even SEC guidance on how the current regulations should be interpreted, could greatly increase transparency without

¹ Jeff Schwartz, *The Conflict Minerals Experiment*, 6 HARVARD BUSINESS LAW REVIEW (forthcoming 2015), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2548267.

² For purposes of the Rule, the “conflict minerals” are tin, tungsten, tantalum, and gold. See *id.* at 7 & n.21.

increasing compliance costs. First, I will briefly describe the methodology of the study, then I will describe my findings and policy recommendations.

I. Empirical Methodology

The SEC regulations under Section 1502 required that public companies begin reporting on their conflict mineral supply chains, and the due diligence efforts undertaken to understand them, in 2014.³ To explore the effects of this new disclosure mandate, I collected quantitative and qualitative data on the nature and scope of the first-year corporate compliance effort. This involved compiling summary statistics on how many companies filed conflict mineral disclosures in that year, in which industries filers did business, and whether companies only filed the basic disclosure document, Form SD, or filed the supplemental and more probing Conflict Minerals Report (“CMR”) as well. I also compared how my findings in these regards matched with the estimates the SEC put forward when adopting the final regulations.

In addition, I read each Form SD and CMR submitted by a company included in the S&P 500 Index (over 200 of these firms made such submissions). In doing so, I measured compliance with each aspect of the Conflict Minerals Rule, and assessed the extent to which the filings served the purpose Congress intended—that is, whether they shed sufficient light on conflict mineral supply chains and corporate due diligence for concerned parties to identify which companies should be praised and which condemned for their sourcing practices and their efforts to understand and address any shortcomings.

II. Empirical Findings

My most important quantitative finding was that far fewer companies filed reports than the SEC had estimated. The agency predicted that nearly 6,000 companies would file Form SDs, but only about 1,300 did so.⁴ The SEC, therefore, overestimated by about 350%.⁵ The agency’s methodology in reaching this estimate was reasonable—it based its calculation on the number of firms in industries most likely to be impacted.⁶ That this approach yielded such a grossly inflated figure suggests that there has been significant noncompliance.⁷

Though the reason so few companies filed is worthy of further research, the qualitative aspect of my study focused on the actions of those firms that did submit the mandated reports. In the sections that follow, I discuss my findings with respect to the content of the required

³ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,274 (Sept. 12, 2012).

⁴ See *id.* at 56,338 n.748.

⁵ The SEC estimated that about 4,500 companies would supplement their Form SD with the more in-depth CMR, but only approximately 1,000 did so—a 341% overestimate. See *id.* at 56,356.

⁶ See Conflict Minerals, 75 Fed. Reg. 80,948, 80,966 & n.176 (proposed Dec. 23, 2010).

⁷ As this estimate was used as the basis of the SEC’s cost calculations, the low number of filers also suggests that the agency’s much-discussed projection that compliance would cost companies \$3-\$4 billion in the first year was far too high. Conflict Minerals, 77 Fed. Reg. at 56,334. My qualitative findings reinforce this conclusion: filers frequently complied in a way that suggests they did not incur substantial expenses. For a more extensive analysis of the costs associated with the Rule and the SEC’s analysis thereof, see Jeff Schwartz & Alexandra Nelson, *Cost-Benefit Analysis and The Conflict Minerals Rule*, 68 ADMINISTRATIVE LAW REVIEW (forthcoming 2016) (on file with authors).

disclosures, as well as the policy implications that stem from what I found. My study reveals noncompliance with specific legal requirements, superfluous aspects of the regulatory scheme, the importance of fledging institutional initiatives to the compliance effort, and the ultimate failure of the Rule to illicit meaningful information about corporate sourcing practices.

a. Noncompliance with Legal Requirements

The Conflict Minerals Rule contains numerous due diligence and reporting obligations. The following table shows where compliance therewith appeared particularly poor.

Table 1: Due Diligence and Reporting Rules with Low Compliance Rates

<u>Legal Requirement</u>	<u>Percent of Companies Taking Step Listed</u>
Amend Supplier Agreements	51%
Institute Grievance Procedure	47%
Report Due Diligence Findings to Senior Management	55%
Adopt a Risk Management Plan	29%
Describe Products Not Found to be Conflict Free	71%
List Processing Facilities	31%
List Countries of Origin of Conflict Minerals	20%
Describe Mineral-Origin Inquiry with Specificity	40%

Several of the legal requirements listed above, and the company responses thereto, merit further discussion. As noted in the table, only 31% of companies listed the processing facilities (i.e., the smelters and refiners) used to process their conflict minerals despite the Rule's requirement that they do so.⁸ Many did not list them even though they had identified at least a portion of those in their supply chain. Some gave no reason for omitting the names, but many claimed that even though they could identify such facilities, they could not link particular facilities to their products. According to these companies, when they polled their suppliers, they would get a response at the "company level," meaning that they were told all of the smelters and refiners that the supplier used. In many cases, however, suppliers apparently did not take the additional step of informing companies which of these facilities processed the minerals that made it into the company's specific products. Companies, therefore, could not match conflict minerals from a particular smelter or refiner with their particular goods, and, based on this, claimed not to have enough information to include facilities in their filings.

⁸ See Form SD, OMB No.: 3235-0697, at Item 1.01(c)(2), available at <http://www.sec.gov/about/forms/formsd.pdf> [hereinafter Form SD].

Country-of-origin disclosure was even scarcer. Only 20% of companies provided this information. As with facilities, some companies gave no explanation for the omission. Others claimed that they could not determine the country of origin for the conflict minerals in their products. While some left it at that, others provided details as to why. When smelters and refiners process conflict minerals, ores from different regions are combined and the location of origin becomes impossible to track. Thus, the only way to trace the source of a conflict mineral in a product is to identify the smelter or refiner from which it came. If, for example, a particular smelter only processed minerals from Asia, then a company downstream from the smelter could know that is where its raw materials came from. Since “company level” reporting from suppliers meant that downstream reporting companies could not match specific smelters or refiners to their products, it also meant that they were unable to match products to countries. The information gap at the supplier level thus formed the grounds for noncompliance with two key aspects of the Rule.

More specifically, the requirement to describe processing facilities and countries of origin appears to have largely been undermined by a combination of (i) a narrow interpretation of what the law requires, necessitating inclusion of such information only when particular smelters or refiners could be matched to a company’s products,⁹ and (ii) an inability or unwillingness on the part of suppliers to provide information on such a granular level.

Further still, this disconnect likely played a large role in derailing the Rule’s sorting ambitions. The hope was that companies would disclose whether their products contain (or may contain) conflict minerals from militarized mines in the Congo, whether their products do not, or whether, despite their due diligence, they were unable to tell.¹⁰ But these distinctions never materialized. Almost every company said they were unable to determine the conflict status of their products or gave no specific conclusion. Although they frequently did not explain their rationale, their inconclusiveness makes sense given the lack of specifics provided to companies by their suppliers. Once a company has taken the position that, because it cannot link specific processing facilities to its products, both the processing facilities and the countries of origin of its products’ conflict minerals are unknown, it follows that the conflict status of its products is unknown for the same reason.

Policy Recommendation—Require that companies list all smelters and refiners in their products’ supply chains, along with the countries of origin of the minerals processed at those facilities, regardless of whether they can determine if minerals from particular processing facilities are found in their products. This could be accomplished through SEC interpretive guidance or an amendment to the current regulations.

⁹ This is a reasonable interpretation of the regulatory language, which simply requires that companies list “the facilities used to process the necessary conflict minerals” and “the country of origin of the necessary conflict minerals” in products that have “not been found to be ‘DRC conflict free.’” *Id.* at Item 1.01(c)(2). Nevertheless, this interpretation certainly runs counter to the spirit of transparency behind the legislation.

¹⁰ While this intent can be gleaned from the regulations, the wording of the relevant requirements is imprecise. See Schwartz, *supra* note 1, at 11 n.60. Moreover, while the SEC wanted companies to label products in their disclosures as “having not been found to be ‘DRC conflict free,’” where this was the case, the agency’s attempt to mandate this specific wording has been struck down as unconstitutional. See Nat’l Ass’n of Mnfrs v. SEC, 748 F.3d 359 (D.C. Cir. 2014), *overruled by* Am. Meat Inst. v. U.S. Dept. of Agric., 760 F.3d 18, 22–23 (D.C. Cir. 2014), *reaffirmed by* Nat’l Ass’n of Mnfrs v. SEC, 800 F.3d 518 (DC. Cir. 2015).

Another central aspect of the Rule is the requirement that companies list their products that have not been found to be conflict free.¹¹ As noted above, 71% of companies did so. While this is much higher than the other figures in the table, the more impressive percentage is misleading. Most companies listed their products at a high level of generality, describing them as “apparel” or “household products,” for example, rather than including something like brand names. This technical compliance frustrates the Rule’s intent. Ostensibly, Congress wanted companies to list product information so that consumers could ascertain which of them contain conflict minerals—and change their purchasing habits accordingly. But individuals have a limited ability to do so if they are only informed of broad product categories.

Policy Recommendation—Require companies to provide a more specific listing of products that have not been found to be conflict free. This could be accomplished through SEC interpretive guidance.

b. Ephemeral Distinctions: RCOI, Due Diligence, and Mineral-Origin Inquiry

The SEC set up a complex multi-tiered diligence structure. The regulations require a company to conduct a so-called “reasonable country of origin inquiry” (an “RCOI”) if it determines that it has conflict minerals in its products.¹² If the RCOI does not reveal the presence of conflict minerals from the Congo region, the company need only file a Form SD, which must “briefly” describe the company’s RCOI process and its conclusion.¹³

If, on the other hand, the RCOI reveals that the company is sourcing conflict minerals from the region or gives the company reason to believe that this is the case, then the company is required to conduct due diligence “on the source and chain of custody” of such minerals.¹⁴ After conducting due diligence, if companies are unable to rule out the possibility that their conflict minerals are from the Congo, they must file a CMR.¹⁵ In the CMR, companies must not only describe their due diligence,¹⁶ but also their “efforts to determine the mine or location of origin with the greatest possible specificity.”¹⁷

There are abstract distinctions between the three concepts just described. Based on the regulations, a company’s due diligence should theoretically be more in depth than its RCOI, and a company’s description of its mineral-origin inquiry should theoretically be more detailed than its description of its due diligence. None of these fine gradations, however, showed up in the reports. And this is not the companies’ fault. It would be inefficient for them to conduct two rounds of inquiry—an RCOI and then due diligence; it makes sense for companies to ask for all of the information at once, which is what they did. Similarly, it is difficult to figure out what information companies were expected to include when describing their mineral-origin inquiry, but omit when describing their due diligence.

¹¹ Form SD, *supra* note 8, at Item 1.01(c)(2).

¹² *Id.* at Item 1.01(a).

¹³ *Id.* at Item 1.01(b).

¹⁴ *Id.* at Item 1.01(c).

¹⁵ *See id.*

¹⁶ *Id.* at Item 1.01(c)(1).

¹⁷ *Id.* at Item 1.01(c)(2).

The overly complex framework had a deleterious effect on the filings. Companies ended up repeating themselves in their RCOI and due diligence sections. Filings were also inconsistent with each other: some companies listed an activity as part of its RCOI while others listed the same thing as part of its due diligence. Such redundancies and inconsistencies made the reports difficult to compare and tedious to read.

The distinction in the level of detail required of companies in describing their mineral-origin inquiry was also lost in practice. As noted above, only 40% of companies included this section. Those that did address this requirement frequently provided no additional information, instead referencing their due diligence and RCOI descriptions as their efforts to determine the mine or location of origin.

Policy Recommendation—Abandon the multi-tiered diligence and reporting structure. Since RCOI and due diligence collapse into one in practice, and the ephemeral distinction between the two is the central distinction between the Form SD and the CMR, one form with one due diligence requirement is all that is necessary. The redundant requirement that companies describe their mineral-origin inquiry with specificity should likewise be eliminated.

c. The Nature of Compliance and the Importance of Institutional Initiatives

Two overarching observations about the nature of compliance stand out from reading the reports: almost all companies conducted due diligence into their supply chains in a similar fashion, and the way in which companies conducted due diligence depended heavily on nascent institutional initiatives.

The Conflict Free Sourcing Initiative (“CFSI”), an organization of industry members concerned about conflict minerals, put together a survey that companies could use to poll their suppliers about, among other things, whether the supplier’s goods contain conflict minerals, from where such minerals originate, and in what facilities they are processed. CFSI also administers the Conflict-Free Smelter Program (“CFSP”), which coordinates third-party audits of smelters and refiners and publicly shares its results on its website. Smelters and refiners successfully completing an audit receive a conflict-free designation from CFSP, which signifies an auditor determination that none of the minerals the facility processes originate from militarized mines in the Congo. So far, CFSP has designated 205 smelters and refiners as conflict free.

The core of almost every company’s due diligence was sending out the CFSI survey to its suppliers and, if those suppliers identified smelters and refiners in their supply chain, reporting on whether those facilities were listed as conflict free by CFSP. Ninety-two percent of companies reported using the CFSI survey and about 70% reported checking to see if processing facilities in their supply chain showed up on the CFSP’s conflict-free list.¹⁸

The emergence of CFSI shows the efficiency gains from centralization and coordination. It makes much more sense for CFSI, an organization with expertise in conflict mineral supply

¹⁸ While 134 companies reported checking the conflict status of their processing facilities against the CFSP list of conflict-free smelters and refiners, only 50 actually disclosed the names of their facilities—less than 40%.

chains, to prepare supplier surveys and coordinate audits, which trace minerals back to their source, than to have individual companies attempt to do so.

CFSI's central role also illuminates the importance of processing facilities as the node where top-down and bottom-up diligence converge. All companies need to do is trace their minerals back to the smelters and refiners, which they can do with the CFSI survey (and perhaps additional follow-up measures). They can then consult the CFSP website to see whether the facilities they have identified are conflict free. Since conflict minerals cannot enter the supply chain after processing, once companies identify that their products are only incorporating materials from conflict-free smelters or refiners, they can declare their goods to be conflict free as well.

Policy Recommendation—A core problem with the current state of affairs is that the diligence practices the regulations envisioned map poorly onto the practices that companies actually adopted. This is part of the reason why, as discussed below, corporate reliance on CFSI's efforts failed to result in the sought-after transparency. Since the compliance process that has organically evolved is better than the one the SEC intended, it should be embraced—that is, the Conflict Minerals Rule should be changed to better fit the diligence methodology that centers around CFSI supplier surveys and CFSP audits. Reliance on these mechanisms should be explicitly endorsed as satisfactory. Moreover, to generate greater transparency through this process, the Rule should be changed to require disclosure of (i) a company's survey response rate (and whether follow-up measures were taken), (ii) whether a company's smelters and refiners are listed as conflict free by CFSP, and (iii) the mine of origin of a company's conflict minerals and the group that controls it (this information should be available for CFSP-approved processing facilities). Finally, if company obligations were confined to the relatively simple tasks of conducting a supplier survey and checking CFSP's conflict-free list, a third-party audit of a company's diligence—a requirement for large companies starting next year—would be unnecessary.¹⁹ These are not the sort of complex endeavors for which an auditor's involvement is necessary. A diligence process that explicitly leans on institutional rather than independent efforts would increase transparency but not costs.

d. The Big Picture from the Empirical Findings

Section 1502 adopts disclosure as the tool to combat humanitarian atrocities in the Congo.²⁰ The path from transparency to decreased violence, however, has many steps in between. The legislation and the implementing rules are designed to elicit supply-chain revelations that inspire shareholder and consumer blowback against companies sourcing from militarized mines; those experiencing (or anticipating) such reprisal are expected to change their practices. The hope is that as companies stop sourcing from militarized mines, the military groups controlling them weaken and lose the funding that fuels their humanitarian abuses.

The entire chain of events depends on the ability of concerned individuals to discern which companies are "conflict free" and which are indirectly supporting human-rights violations through

¹⁹ See Form SD, *supra* note 8, at Item 1.01(c)(1)(ii) (containing the audit requirement); *id.* at Instruction 2 to Item 1 (inserting a two-year delay in implementation).

²⁰ See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1502(a), 124 Stat. 1376, 2213 (2010) (expressing Congress's concern about human-rights violations in the Congo).

their activities. But this cannot be done through inspection of the conflict mineral filings. The submissions lack the type of specifics regarding conflict mineral supply chains and the extent to which companies are scrutinizing and adjusting them that are necessary for the market forces that the Rule envisions to take hold.

III. Conclusion

My empirical findings are, for the most part, dispiriting, but they also reveal that the effort to drive change in the Congo through transparency is not hopeless. Surgical changes to wording or interpretive guidance on the nature of the regulatory obligations could vastly improve the content of company reports, and the rules could be streamlined to render company disclosures more readable and comparable. Even more promising, in their filings companies leveraged institutional efforts to create a diligence process that has the potential to deliver supply-chain transparency without raising compliance costs. If the regulations were reoriented around this approach, then the disclosures might prove revealing enough to set in motion the chain of events on which Section 1502 depends for its success.

I am happy to answer any questions about my findings and my policy prescriptions. Both are also described in greater detail in my article, *The Conflict Minerals Experiment*, attached hereto.

Thank you again for giving me the opportunity to present here today.

Appendix A

Jeff Schwartz

The Conflict Minerals Experiment

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THE CONFLICT MINERALS EXPERIMENT

Jeff Schwartz*

In Section 1502 of Dodd-Frank, Congress instructed the SEC to draft rules that would require public companies to report annually on whether their products contain certain Congolese minerals. This unprecedented legislation and the SEC rulemaking that followed have inspired an impassioned and ongoing debate between those who view these efforts as a costly misstep and those who view them as a measured response to human-rights abuses committed by the armed groups that control many mines in the Democratic Republic of the Congo.

This Article for the first time brings empirical evidence to bear on this controversy. I present data on the inaugural disclosures that companies submitted to the SEC. Based on a quantitative and qualitative analysis of these submissions, I argue that Congress's hope of supply-chain transparency goes unfulfilled, but amendments to the rules could yield useful information without increasing compliance costs. The SEC filings expose key loopholes in the regulatory structure and illustrate the importance of fledgling institutional initiatives that trace and verify corporate supply chains. This Article's proposal would eliminate the loopholes and refocus the transparency mandate on disclosure of the supply-chain information that has come to exist thanks to these institutional efforts.

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INTRODUCTION

The Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank”) was a response to the 2008 financial crisis, but one of its most controversial provisions had nothing to do with the economic collapse.¹ In Section 1502, Congress instructed the Securities and Exchange Commission (the “SEC”) to draft regulations requiring companies to disclose annually whether certain minerals for their products were originally obtained from mines controlled by armed groups in the Congo region of Africa.² This effort to bring supply-chain transparency to so-called conflict minerals (i.e., tin, tungsten, tantalum, and gold) has been ferociously criticized by business groups and staunchly defended by human-rights advocates.³

Much of the debate, though, has been based on conjecture. The heated back-and-forth that has filled op-ed pages and scholarly journals largely took place before the statute had been given any time to operate.⁴ Both those who argued that the legislation was a costly mistake and those who defended it as a judicious counterweight to humanitarian atrocities linked to armed groups in the Congo region implicitly or explicitly staked their claims on conceptions of what would be contained in the SEC-mandated filings.⁵ Neither side, however, had the benefit of actual compliance data to support its position.

¹ Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of the U.S. Code).

² *Id.* § 1502, 124 Stat. at 2213 (codified at 15 U.S.C. § 78m(p) (2012)).

³ See *infra* Part I.C.

⁴ See, e.g., Karen E. Woody, *Conflict Minerals Legislation: The SEC’s New Role as Diplomatic and Humanitarian Watchdog*, 81 FORDHAM L. REV. 1315 (2012); David Aronson, *How Congress Devastated Congo*, N.Y. TIMES (Aug. 7, 2011), <http://www.nytimes.com/2011/08/08/opinion/how-congress-devastated-congo.html>.

⁵ One thing that is not controversial is the direness of the situation in the Democratic Republic of the Congo. For an overview of the humanitarian crisis, see Alexandra Nelson,

Now, more than four years after the bill was signed into law, the SEC rulemaking is complete and companies have submitted their first regulatory filings: those pertaining to their use of conflict minerals during the 2013 calendar year. This Article closely analyzes these disclosures, and, in so doing, brings empirical evidence to bear on the conflict-minerals controversy. I present data on the scope and nature of compliance based on a quantitative review of the over 1,300 conflict-minerals filings and a qualitative review of each filing submitted by a company included in the S&P 500 Index (over 200 of these companies, which are among the largest in the U.S., submitted filings).⁶

The overall picture is not pretty. I argue that the filings do not contain sufficient information about conflict-mineral supply chains for the legislation to work as intended, and that this is the result of shortcomings in the original law, in the SEC rules that followed, and in the corporate compliance effort. While the evidence largely supports the critics, I contend that the filings also contain flickers of hope and suggest a set of reforms that would lead to more transparency without additional expense.

The data suggests that both the costs and benefits of the rules were grossly exaggerated by those debating their merits. Costs were likely much lower than estimated because far fewer companies actually filed reports than estimated and many filers complied in a largely superficial manner suggestive of minimal effort.⁷

Benefits likewise appear muted. The conflict-minerals rules borrow from the human-rights world the regulatory strategy of “naming and shaming,” which, like the securities law trope, “sunlight is the best disinfectant,” is the concept that exposure of reprehensible conduct eliminates it.⁸ In this case, the rules are

Note, *The Materiality of Morality: Conflict Minerals*, 2014 UTAH L. REV. 219, 221–223.

⁶ For a description of the S&P 500, see *S&P 500*, S&P DOW JONES INDICES, <http://us.spindices.com/indices/equity/sp-500> (last visited Dec. 16, 2014). The data on the scope of compliance includes, among other things, information on how many companies made filings pursuant to the rule and the size and type of companies that filed reports. See *infra* Part II.A. The data on the nature of compliance includes information on the steps companies took to meet their obligations. See *infra* Part II.B.

⁷ See *infra* Part II.B.

⁸ See Woody, *supra* note 4, at 1344. This is not the first time corporations have been the subject of naming-and-shaming efforts. See generally David A. Skeel, Jr., *Shaming in Corporate Law*, 149 U. PA. L. REV. 1811 (2001). For a more general discussion of naming and shaming in the human-rights context, see Oona Hathaway & Scott J. Shapiro, *Outcasting: Enforcement in Domestic and International Law*, 121 YALE L. J. 252, 309 & n. 178 (2011); Suzanne Katzenstein, *Reverse-Rhetorical Entrapment: Naming and Shaming as a Two-Way Street*, 46 VAND. J. TRANSNAT'L L. 1079, 1082–86 (2013). The idea of using the securities laws to address social goals was given its most comprehensive and elegant defense in Cynthia A. Williams, *The Securities and Exchange Commission and Corporate Social Transparency*, 112 HARV. L. REV. 1197 (1999). The conflict-minerals provision is one of several social disclosure laws in Dodd-Frank. The statute also called for disclosures regarding mine safety, extractive industry practices, and pay disparities. See Jeff Schwartz, *The Twilight of Equity Liquidity*, 34 CARDOZO L. REV. 531, 584–85 & n. 319 (2012).

designed to inspire shareholder and consumer blowback against companies sourcing from militarized mines; those experiencing this reprisal are then expected to change their practices.⁹ This logic, while appealing on its face, depends on the ability of concerned individuals to discern which companies are “conflict free” and which are indirectly supporting human-rights violations through their activities. But this cannot be done through inspection of the first-year filings. The vast majority of companies reached the same conclusion (that they have not been able to determine the source of their minerals) and conducted their diligence in nearly the same way (the centerpiece of nearly every effort was a simple supplier survey). This is not the stuff of sell orders and picket signs.

The conflict-minerals rules resemble an elaborate firework that falls quietly to the ground rather than yielding an eye-catching display. This is problematic in and of itself, but also serves as a broader caution. Supply-chain transparency is a global concern. Other countries are looking into similar rules for conflict minerals and “name and shame” is seen as a way to address other ills in the supply chain, including deplorable working conditions, slavery, and child labor.¹⁰ The failure of the conflict-minerals rules suggests that in their current form they should not serve as the template for future efforts.

An analysis of the filings provides insight into what and where things went wrong. Although it is tempting to lay blame for the underwhelming reports solely on botched rulemaking or perfunctory compliance, culpability appears to extend to all involved. The overarching problem with the reports is that reading them does not provide insight into which companies ought to be praised and which condemned. One probable explanation is that naming and shaming conflict-mineral users is inherently difficult. This form of regulation works best when there are clear wrongdoers; not when, as is the case here, singling out the offenders is tricky and dependent on cooperation of multiple parties, including the targets of the rules. The latter invites opacity.

There were also problems with how this regulatory approach was implemented. Rather than recognize and respond to the challenges of applying naming and shaming in this space, regulators created a prolix rule structure that maps poorly onto the name-and-shame goal. For example, information about where a company’s conflict minerals are processed into commercially usable forms

⁹ See Dodd-Frank, Pub. L. No. 111-203, § 1502(a), 124 Stat. 1376, 2213 (2010) (expressing Congress’s concern about human-rights violations in the Congo); Woody, *supra* note 4, at 1344.

¹⁰ See DALE NEEF, *THE SUPPLY CHAIN IMPERATIVE: HOW TO ENSURE ETHICAL BEHAVIOR IN YOUR GLOBAL SUPPLIERS* 26–27 (2004); Jamie D. Prenkert & Scott J. Shackelford, *Business, Human Rights, and the Promise of Polycentricity*, 47 VAND. J. TRANSNAT’L L. 451, 483–84 (2014); Steven Nakasone, *Name and Shame is New Supply Chain Game*, RETAILING TODAY (Jan. 5, 2012), <http://www.retailingtoday.com/article/name-and-shame-new-supply-chain-game>. Several states are also considering, or have already approved, conflict-minerals regulation. See Prenkert & Shackelford, *supra* note 10, at 482–83; Nakasone, *supra* note 10.

is central to discerning whether it is sourcing from militarized mines. But many companies reasonably interpreted SEC language to require that they report such data only when they could precisely identify the processing facilities linked to their individual products; companies plausibly claimed that they could not do so and chose not to reveal this information. Drafting oversights like this greatly contributed to the flimsy reports.

Finally, companies forced to comply with the rules showed little sympathy for their goals. Instead of responding in a manner responsive to the rules' intent of bringing supply-chain transparency to conflict minerals, they usually chose to read the rules literally and narrowly, seizing on opportunities—like the one just mentioned regarding processing facilities—to provide as little information as possible. Worse still, many corporate filers simply ignored clear requirements. The reports ultimately reveal shallow, almost cynical, compliance with poorly crafted rules built on a regulatory paradigm better suited to simpler contexts.

While all of this provides fodder for those who have sought the rules' repeal,¹¹ I argue that it is too early to abandon the experiment. Though companies claimed ignorance as to many things, a large number also claimed to have identified—even if they chose not to reveal—the facilities used to process the conflict minerals in their supply chain.¹² In addition, third-party audits coordinated through a nongovernmental institutional framework have certified a number of processing facilities as conflict-free, and these audits and certifications are ongoing.¹³

That these facilities can be identified and then sorted based on their conflict status makes them a bright spot in otherwise murky supply chains. Based on this information, companies can be named and shamed according to whether they use conflict-free processing facilities. I argue, therefore, that the conflict-minerals rules should be reoriented around such information. Companies should be clearly required to identify and provide the conflict status of the processing

¹¹ See, e.g., CHRIS N. BAYER, DODD-FRANK SECTION 1502: POST-FILING SURVEY 2014, at 40 (2014), available at <http://www.payson.tulane.edu/sites/default/files/content/files/TulanePaysonS1502PostFilingSurvey.pdf> (describing results of a survey of affected companies in which the most frequent recommendation by those surveyed was repeal); Ben Dipietro, *Investor Groups Back Conflict Minerals Law*, WALL ST. J. (May 31, 2013, 3:58 PM), <http://blogs.wsj.com/riskandcompliance/2013/05/31/investor-groups-back-conflict-minerals-law> (describing business groups seeking repeal); Benjamin Goad, *Wall Street Reform Rule Said to Increase Violence in Congo*, THE HILL (May 21, 2013, 7:58 PM), <http://thehill.com/regulation/business/301075-wall-street-reform-rule-said-to-have-increased-congolese-violence> (quoting Congressman Mick Mulvane calling the rules “absurd” and arguing for repeal); John Kester, *SEC Should Not Handle Conflict Minerals Reports: Commissioner*, WALL ST. J. (Oct. 17, 2014, 4:15 PM), <http://blogs.wsj.com/cfo/2014/10/17/sec-should-not-handle-conflict-minerals-reports-commissioner> (quoting SEC Commissioner Daniel Gallagher Jr. as arguing for repeal).

¹² See *infra* text accompanying notes 156, 169–173.

¹³ See *infra* text accompanying notes 48–52.

facilities in their supply chains. If they reveal facilities that are not conflict free, they should be free to explain why. The marketplace can then judge whether such justifications are reasonable or consist of hollow generalities. I also propose a set of supplemental changes that would eliminate redundancies and loopholes in the current rules and render the entire framework more cohesive. This proposal maintains Dodd-Frank's disclosure-based reform model, but re-engineers it to more effectively further the statute's humanitarian goals without increasing compliance costs.

Part I of this Article describes the conflict-minerals legislation, the SEC rules implementing it, and the controversy surrounding these congressional and regulatory efforts. Part II then provides data on the nature and scope of corporate compliance with the newly formed regulatory regime. In this Part, I also analyze the data and argue it suggests that the conflict-minerals rules have so far turned out to be far less costly than critics feared, but also far less illuminating than supporters hoped. Next, Part III examines potential explanations for why the rules have proven unremarkable. I argue that the lackluster results stem from poorly conceived legislation and regulation and from halfhearted compliance therewith. Finally, in Part IV, I suggest a set of reform proposals based on the idea that greater transparency surrounding the processing facilities in corporate supply chains would make the filings under the conflict-minerals rules much more useful.

I. LAWMAKING, LITIGATION, AND CONTROVERSY

A. The Conflict-Minerals Legislation and Implementing Regulations

Section 1502 of Dodd-Frank, which sets forth the legislative framework for the conflict-minerals rules, is a dense provision with an awkward structure. The core of the legislation consists of three parts: an introduction followed by two subsections.¹⁴ The introduction instructs the SEC to write regulations mandating that companies annually disclose whether conflict minerals that are necessary to their products originate from the Democratic Republic of the Congo (the "DRC") or an adjoining country. Where this is the case, the SEC is to require that companies submit a report pertaining to their use of such minerals.¹⁵

The subsections focus on the contents of this report. The first tells the SEC to require that companies include a description of the due-diligence measures they have undertaken to determine "the source and chain of custody" of the conflict minerals in their supply chain.¹⁶ The SEC is also to mandate that these reports be independently audited.¹⁷ The second subsection then goes on to list other things

¹⁴ See 15 U.S.C. § 78m(p)(1)(A)(i)–(ii) (2012).

¹⁵ See *id.* § 78m(p)(1)(A). A company's products includes both things it manufactures itself and things that it contracts to manufacture. *Id.* § 78m (p)(1)(A)(ii).

¹⁶ *Id.* § 78m(p)(1)(A)(i).

¹⁷ *Id.*

Congress wants to see. The SEC is instructed to call on companies to name their report's auditor and to describe (i) all of their products that are not conflict free,¹⁸ (ii) "the facilities used to process the conflict minerals" in their products, (iii) "the country of origin" of such conflict minerals, and (iv) "the efforts to determine the mine or location of origin" of such conflict minerals "with the greatest possible specificity."¹⁹ In addition to SEC reporting, the legislation also requires that this information be made available on the disclosing corporation's website.²⁰

The key phrase, "conflict minerals," includes tantalum, tin, tungsten, and gold.²¹ These materials are ubiquitous in our everyday lives. They are key components in electronics, including smartphones and computers, but can also be found in everything from household tools to jet engines.²²

Though the law's drafting is somewhat muddled, Congress's ambition with respect to these commercial building blocks is clear. Basically, it wants companies, first, to figure out if their products contain conflict minerals and, second, to determine where those minerals come from. It also wants companies to report how they go about this exercise, and for those companies potentially sourcing conflict minerals from militarized mines to list the products in which such minerals are contained. The goal here seems to be a "bad actors" list of companies and their products that would provide the impetus for socially minded shareholders and customers to put pressure on companies to change their sourcing practices. The hope would be that this pressure, in turn, inspires companies to stop doing business with militia-controlled mines, which would lessen the funding available

¹⁸ A product is not conflict free if it contains or may contain minerals sourced from mines controlled by armed groups in the Congo region. *See id.* § 78m(p)(1)(A)(ii).

¹⁹ 15 U.S.C. § 78m(p)(1)(A)(ii).

²⁰ 15 U.S.C. § 78m(p)(1)(E).

²¹ Dodd-Frank, Pub. L. No. 111-203, § 1502(e)(4)(A)–(B), 124 Stat. 2218 (2010). Tantalum, tin, and tungsten are not specifically listed in the legislation. Rather it refers to the mineral ores from which they are extracted (coltan, cassiterite, and wolframite, respectively), as well as derivatives thereof. *See id.*; Conflict Minerals, 75 Fed. Reg. 80,948, 80,950 (proposed Dec. 23, 2010) (to be codified at 17 C.F.R. pts. 229, 249b). Though tantalum, tin, tungsten, and gold are commonly referred to as "conflict minerals" in commerce and in the debate, they are technically metals. *See* DEP'T OF COMMERCE, DEPARTMENT OF COMMERCE REPORTING REQUIREMENTS UNDER § 1502(D)(3)(C) OF THE DODD FRANK ACT WORLD-WIDE CONFLICT MINERAL PROCESSING FACILITIES 2 (2013), <http://www.ita.doc.gov/td/forestprod/DOC-ConflictMineralReport.pdf> [hereinafter COMMERCE REPORT]; ENOUGH PROJECT & GRASSROOTS RECONCILIATION GRP., A COMPREHENSIVE APPROACH TO CONGO'S CONFLICT MINERALS 3 (2009), *available at* <http://www.enoughproject.org/files/Comprehensive-Approach.pdf> [hereinafter A COMPREHENSIVE APPROACH]. Despite the "conflict" label attached to these materials, relatively small percentages come from the Congo: 15 to 20 percent of tantalum, 6 to 8 percent of tin, 2 to 4 percent of tungsten, and less than 1 percent of gold come from the region. A COMPREHENSIVE APPROACH, *supra* note 21, at 15.

²² *See* Conflict Minerals, 75 Fed. Reg. at 80,950.

to armed groups and thereby temper the violence in the region.²³ Such an approach is commonly referred to in the human-rights arena as “naming and shaming”—bad actors are brought to light in the hopes that they will change their behavior to avoid public condemnation.²⁴

This congressional intent is reflected in the SEC’s regulations, which the agency finalized on August 22, 2012.²⁵ These rules add a great deal of nuance to the legislation’s somewhat underdeveloped foundation. In fact, while Congress looks to have sacrificed clarity for brevity, the SEC made the opposite mistake and created a Byzantine and, at times, circular rule structure.

Just as the legislation instructs, under the SEC rules the first step is for companies to determine whether conflict minerals are necessary to their products.²⁶ If not, companies need not file anything.²⁷ If a company does make use of conflict minerals, however, it is required to conduct a so-called “reasonable country of origin inquiry” (an “RCOI”) with regard to the conflict minerals in its products.²⁸ If the RCOI does not reveal the presence of conflict minerals from the Congo region, the company need only file a Form SD, which must “briefly” describe the company’s RCOI process and its conclusion.²⁹ The company also needs to post this information on its website.³⁰

If the RCOI reveals that the company is sourcing conflict minerals from the Congo region or gives the company reason to believe that this is the case, then the company is required to conduct due diligence “on the source and chain of custody” of such minerals.³¹ If, based on its due diligence, the company determines that its minerals are *not* actually from the Congo region, then it must briefly

²³ Much in the same vein, one of the legislation’s authors, Dick Durbin, has argued that the “transparency” elicited through the rules “will allow consumers and investors to know which companies source materials more responsibly in DRC and will hopefully persuade the industry to finally create clean supply chains out of Congo.” Press Release, Senator Dick Durbin, Statement on US District Court Decision Regarding Conflict Minerals (July 7, 2013), *available at* <http://www.durbin.senate.gov/newsroom/press-releases/durbin-statement-on-us-district-court-decision-regarding-conflict-minerals>.

²⁴ See Katzenstein, *supra* note 8, at 1082–86.

²⁵ Conflict Minerals, 77 Fed. Reg. 56,274, 56,276 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

²⁶ See Form SD, OMB No.: 3235-0697, at Item 1.01(a), *available at* <http://www.sec.gov/about/forms/formsd.pdf> [hereinafter Form SD].

²⁷ *Id.* at Item 1.01(a)–(b).

²⁸ *Id.* at Item 1.01(a).

²⁹ *Id.* at Item 1.01(b). The SEC also set up a parallel process for companies that are using conflict minerals derived from recycled or scrap sources. It is not necessary to fully describe this added layer of complexity. Most importantly, products that solely contain minerals from recycled or scrap sources are considered conflict free. *Id.* at Item 1.01(c)(4).

³⁰ *Id.* at Item 1.01(b).

³¹ Form SD, *supra* note 26, at Item 1.01(c).

describe its due-diligence efforts, its RCOI, and its conclusion both on a Form SD and its website.³²

The SEC declined to give guidance on what specifically constitutes an RCOI.³³ It said only that such an inquiry need be in good faith.³⁴ The agency did say, however, with respect to due diligence, that such efforts must be audited³⁵ and conform to “a nationally or internationally recognized due-diligence framework.”³⁶

Currently, the only such framework in existence is the OECD’s *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas* (the “*OECD Guidance*”).³⁷ Though the document is wordy and lengthy (over 100 pages including appendices), the guidance it offers boils down to a five-step due-diligence process.³⁸ The first is the most important, and has a number of subparts, while the remainder are more straightforward.

Step one instructs companies to “establish strong company management systems.”³⁹ According to the *OECD Guidance*, this includes adopting a conflict-minerals policy and making it available to suppliers and the general public, setting up an internal conflict-minerals diligence team, establishing a system for mapping the conflict-minerals supply chain, incorporating a supply-chain policy in agreements with suppliers, and establishing a grievance mechanism for those wishing to report sourcing violations.⁴⁰

The second step is to “identify and assess risk in the supply chain.”⁴¹ This means “assessing the due diligence practices” of the smelters and refiners of conflict minerals in the corporate supply chain by comparing their practices against

³² See *id.* at Item 1.01(c).

³³ Conflict Minerals, 77 Fed. Reg. 56,274, 56,311–12 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

³⁴ Form SD, *supra* note 26, at Item 1.01(a).

³⁵ *Id.* at Item 1.01(c)(1)(ii).

³⁶ *Id.* at Item 1.01(c).

³⁷ Conflict Minerals, 77 Fed. Reg. at 56,281 n.55; ORG. FOR ECON. COOPERATION & DEV., OECD DUE DILIGENCE GUIDANCE FOR RESPONSIBLE SUPPLY CHAINS OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS (2nd ed. 2013), *available at* <http://www.oecd.org/corporate/mne/GuidanceEdition2.pdf> [hereinafter OECD GUIDANCE]. The OECD drafted this document over several years in collaboration with eleven African nations with the goal of “help[ing] companies respect human rights and avoid contributing to conflict through their mineral sourcing practices.” *Id.* at 3. States are not legally bound to comply. *Id.* at 4. For additional background, see LEVIN ET AL., MINERAL SUPPLY CHAIN DUE DILIGENCE AUDITS AND RISK ASSESSMENTS IN THE GREAT LAKES REGION 8–9 (2013), *available at* http://www.srz.com/files/upload/Conflict_Minerals_Resource_Center/OECD_Mineral_Supply_Chain-Due_Diligence_Audits_and_Risk_Assessments_in_the_Great_Lakes_Region.pdf.

³⁸ OECD GUIDANCE, *supra* note 37, at 17–19.

³⁹ *Id.* at 17.

⁴⁰ *Id.*

⁴¹ *Id.* at 18.

those specified for such entities in the *OECD Guidance*.⁴² Smelters and refiners are the key processing facilities for conflict minerals. It is at these locations where the mineral ores are transformed into commercially valuable forms.⁴³

Third, companies are to “design and implement a strategy to respond to identified risks.”⁴⁴ This includes reporting the findings of the risk assessment in step two to senior management, as well as implementing a plan to mitigate supply-chain risks.⁴⁵ A risk-mitigation plan would outline a procedure for dealing with suppliers or others in their supply chain that have shoddy supply-chain diligence or are suspected of sourcing from militarized mines.⁴⁶ Companies can respond to these supply-chain risks by, for example, temporarily suspending trade until the issues are resolved or ending their relationship with the implicated party.⁴⁷

Fourth, companies must “carry out an independent third-party audit” of the smelters and refiners in their supply chain.⁴⁸ While this seems like a lot to ask of individual companies, the OECD also advises that the audits can be centralized and coordinated through an institutional mechanism.⁴⁹ The key institutional mechanism for doing so is the Conflict-Free Smelter Program (“CFSP”), which is an industry-led effort that coordinates third-party audits of smelters and refiners and publicly shares its results on its website.⁵⁰ It is the key contribution of the Conflict-Free Sourcing Initiative (“CFSI”), an organization of industry members concerned about conflict minerals, which through this and other efforts described below has had a major impact on the nature of conflict-mineral compliance.⁵¹ The OECD has blessed CFSI audits as an alternative to individual efforts.⁵² Fifth and finally, as called for by the rules themselves, the *OECD Guidance* instructs companies to publicly report on their supply-chain due diligence.⁵³

⁴² *Id.* at 42.

⁴³ GOV’T ACCOUNTABILITY OFFICE, SEC CONFLICT MINERALS RULE: INFORMATION ON RESPONSIBLE SOURCING AND COMPANIES AFFECTED 1 (2013), *available at* <http://www.gao.gov/assets/660/655972.pdf> [hereinafter GAO REPORT].

⁴⁴ OECD GUIDANCE, *supra* note 37, at 18.

⁴⁵ *Id.* at 18.

⁴⁶ *See id.*

⁴⁷ *Id.*

⁴⁸ *Id.* at 19, 47.

⁴⁹ *See id.* at 50–51.

⁵⁰ *See Conflict-Free Smelter Program*, CONFLICT-FREE SOURCING INITIATIVE, <http://www.conflictreesourcing.org/conflict-free-smelter-program/> (last visited Nov. 11, 2014); ORG. FOR ECON. COOPERATION & DEV., DOWNSTREAM IMPLEMENTATION OF THE OECD DUE DILIGENCE GUIDANCE FOR RESPONSIBLE SUPPLY CHAINS OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS 46 (2013), *available at* <http://www.oecd.org/corporate/mne/DDguidanceTTTpilotJan2013.pdf> [hereinafter OECD STUDY]. For an overview of CFSI audits, see LEVIN ET AL., *supra* note 37, at 43–48 tbl.5.

⁵¹ *See About the Conflict-Free Sourcing Initiative*, CONFLICT-FREE SOURCING INITIATIVE, <http://www.conflictreesourcing.org/about/> (last visited Nov. 23, 2014).

⁵² *See* OECD STUDY, *supra* note 50, at 47.

⁵³ OECD GUIDANCE, *supra* note 37, at 19.

After compliance with all of the OECD steps, if companies are unable to rule out the possibility that their conflict minerals are from the Congo region, they must file a “Conflict Minerals Report” that includes a laundry list of items.⁵⁴ A company’s report must describe its due diligence and include an independent auditor’s certification thereof.⁵⁵ The auditor is to confirm (i) that the company inquiry conformed in all material respects to a “recognized due diligence framework” (meaning the *OECD Guidance* as it is the only one), and (ii) that the diligence that the company actually conducted matches what it described in its Conflict Minerals Report.⁵⁶

Aside from a description of audited due diligence, the rules require, in language quite close to that of Section 1502 itself, that companies include a list of products “that have not been found to be ‘DRC conflict free.’”⁵⁷ A product would fall into this category if a company could not determine that it did not contain conflict minerals from militarized mines.⁵⁸ This awkward double negative means that products must be listed, unless a company affirmatively determines that they are conflict free. The SEC did not prescribe that companies note the brand names or model numbers of their products; rather, it gave companies the flexibility to describe their goods however they deem appropriate.⁵⁹

The overall list, however, must be labeled as that of products “having not been found to be ‘DRC conflict free.’”⁶⁰ In addition, companies are required to note “the facilities used to process the necessary conflict minerals in those products, the country of origin of the necessary conflict minerals in those products,

⁵⁴ See Form SD, *supra* note 26, at Item 1.01(c).

⁵⁵ *Id.* at 1.01(c)(1).

⁵⁶ *Id.* at Item 1.01(c)(1)(ii)(A).

⁵⁷ *Id.* at Item 1.01(c)(2).

⁵⁸ See *id.* at Item 1.01(c)(2), (d)(4).

⁵⁹ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,317–18, 56,323 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

⁶⁰ Even though the labeling of company products as conflict free or not would seemingly be the centerpiece of the rules, it is only explicitly included in the instructions to Form SD. Rather than specify any particular label, the body of the rules only requires a *description* of products “that have not been found to be ‘DRC conflict free.’” Form SD, *supra* note 26, at Item 1.01(c)(2). The instructions pertaining to a temporary safe-harbor discussed *infra* text accompanying notes 62–64, however, explain that, after a grace period during which the rules allow companies to claim “conflict undeterminable” status, “a registrant with products manufactured or contracted to be manufactured that are ‘DRC conflict undeterminable,’ must provide a description of those products as having not been found to be ‘DRC conflict free[.]’” Form SD, *supra* note 26, at Instruction 2 to Item 1. That the requirement is only included with a discussion of the safe harbor implies that it relies on a more direct statement elsewhere, but one does not exist. It is also only by implication that companies with products that are not conflict free are required to label them in the above manner even during the grace period.

and the efforts to determine the mine or location of origin with the greatest possible specificity.”⁶¹

Finally, the rules include a ramp-up period. For the first four years for smaller companies, and the first two years for others, those companies that cannot reach a firm conclusion as to the source of their conflict minerals need not list their products as “having not been found to be ‘DRC conflict free.’”⁶² Rather they can list them as “DRC conflict undeterminable,” and specify the efforts they are currently undertaking or plan to undertake to “mitigate the risk that its necessary conflict minerals benefit armed groups.”⁶³ In addition, during the ramp-up period, those companies taking advantage of this category need not have their due-diligence efforts audited.⁶⁴

Working through these rules gives one the feeling of a character in an M.C. Escher drawing.⁶⁵ There are numerous orthogonal paths through the multi-layered structure, each with its own unique feature. Despite the complexity, however, the SEC remained true to Congress’s instructions. At their core, the rules basically require that companies conduct diligence into their conflict-mineral supply chain and report not only on the nature of their diligence but on their findings, including the extent to which conflict minerals from militarized mines make it into their products.

B. The Conflict-Minerals Rules in Court

The ink was barely dry on the final rules when the National Association of Manufacturers, the U.S. Chamber of Commerce, and the Business Roundtable challenged them in federal court.⁶⁶ They raised three primary arguments: that the SEC abused its discretion in failing to include a *de minimus* exception for those companies that make scant use of conflict minerals,⁶⁷ that the agency failed to

⁶¹ Form SD, *supra* note 26, at Item 1.01(c)(2).

⁶² The rules never explicitly state that “conflict undeterminable” is a required label during the two-year grace period, though the SEC clearly interprets them as saying as much. In the adopting release, the SEC says that the “final rule permits ... issuers [unable to determine the source of their conflict minerals] to describe their products containing those conflict minerals as “DRC conflict undeterminable.” Conflict Minerals, 77 Fed. Reg. at 56,321.

⁶³ See Form SD, *supra* note 26, at Item 1.01(c)(1)(iii).

⁶⁴ *Id.* at Instruction 2 to Item 1. Also, for products that are deemed “conflict undeterminable,” companies only need to provide facility and country of origin information “if known.” *Id.* at Item 101(c)(2)(i). It is hard to see what this adds, though, because companies would never be able to provide information they did not know.

⁶⁵ See, e.g., *Relativity (M. C. Escher)*, WIKIPEDIA.ORG, [http://en.wikipedia.org/wiki/Relativity_\(M._C._Escher\)](http://en.wikipedia.org/wiki/Relativity_(M._C._Escher)) (last visited Nov. 27, 2014).

⁶⁶ Christopher M. Matthews, *Business Groups Sue to Block “Conflict Minerals” Rules*, WALL ST. J. CORRUPTION CURRENTS (Oct. 22, 2012, 4:38 PM), <http://blogs.wsj.com/corruption-currents/2012/10/22/business-groups-sue-to-block-conflict-minerals-rules/>.

⁶⁷ See Nat’l Ass’n of Manufacturers v. SEC, 956 F. Supp. 2d 43, 61 (D.D.C. 2013),

conduct an appropriate cost-benefits analysis,⁶⁸ and finally, that the requirement to describe products as “having not been found to be ‘DRC conflict free’” was a free-speech violation.⁶⁹

The D.C. District Court found none of these arguments compelling.⁷⁰ But on appeal, the Circuit Court held that the requirement to label products as specified violates corporate free-speech rights.⁷¹ The court imposed a heightened standard of review on this mandate because, unlike traditional securities regulation, the labeling provision at issue here was not aimed at preventing consumer deception.⁷² According to the court, the rule failed the elevated review because the SEC did not provide evidence that it could have accomplished its goal of connecting company products with conflict minerals through less restrictive means.⁷³ The court noted that companies could have been permitted, for example, to use their own language to describe products that contain conflict minerals rather than words specifically dictated to them.⁷⁴

The Circuit Court is rehearing the case,⁷⁵ but this is how the law currently stands. In addition, to be consistent with this ruling while it remains good law, the SEC has stayed the requirement that companies, when appropriate during the phase in period, describe their products as “conflict undeterminable.”⁷⁶ Despite overbroad headlines,⁷⁷ the court’s determination and the SEC’s conforming redaction have little practical significance. Firms must still list all products that contain conflict minerals that may have originated from militarized mines—that portion of the rule remains in place—but they need not use any particular label to

rev’d in part, Nat’l Ass’n of Manufacturers v. SEC, 748 F.3d 359 (D.C. Cir. 2014), *overruled by* American Meat Institute v. U.S. Dept. of Agriculture, 760 F.3d 18, 22–23 (D.C. Cir. 2014).

⁶⁸ *Id.* at 55.

⁶⁹ *See id.* at 73.

⁷⁰ *See id.* at 82.

⁷¹ Nat’l Ass’n of Manufacturers v. SEC, 748 F.3d at 373 (D.C. Cir. 2014), *overruled by*, American Meat Institute v. U.S. Dept. of Agriculture, 760 F.3d 18, 22–23 (D.C. Cir. 2014).

⁷² *See id.* at 371–72.

⁷³ *Id.* at 372.

⁷⁴ *Id.* at 372–73.

⁷⁵ Jenna Greene, *D.C. Circuit to Give Second Look At SEC’s Conflict-Minerals Rule*, NAT’L L. J. (Nov. 24, 2014), <http://www.nationallawjournal.com/id=1202677128135/DC-Circuit-to-Give-Second-Look-At-SECs-ConflictMinerals-Rule-#ixzz3KZIBnHVk>.

⁷⁶ Daniel M. Gallagher & Michael S. Piwowar, Commissioners, U.S. Sec. & Exch. Comm’n, Joint Statement on the Conflict Minerals Decision (Apr. 28, 2014), *available at* http://www.sec.gov/News/PublicStmt/Detail/PublicStmt/1370541681994#.VBYPV_k7tcY.

⁷⁷ *See, e.g.*, Jonathan H. Adler, *D.C. Circuit Finds SEC’s Conflict Mineral Disclosure Rule Violates First Amendment*, WASH. POST VOLOKH CONSPIRACY (April 14, 2014), <http://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/04/15/d-c-circuit-finds-secs-conflict-mineral-disclosure-rule-violates-first-amendment/>.

describe them. Rather, companies are free to take the court up on its suggestion and use their own language to describe their list of products.

C. The Conflict-Minerals Rules and Policy Controversy

As is often the case when rules are challenged, this litigation was policy-driven. While the conflict-minerals rules have been subject to numerous critiques, the primary point of contention has involved their potential compliance costs. In its final rules, the SEC estimated initial costs to be \$3 to \$4 billion with yearly costs thereafter ranging between approximately \$200 and \$600 million per year.⁷⁸ And others had estimated that costs would be even higher.⁷⁹ The National Association of Manufacturers, for instance, estimated initial costs ranging from \$8 to \$16 billion.⁸⁰ The sheer number of companies required to comply was one driver of these estimates. The SEC thought that approximately 6,000 companies would file Form SDs and that 75% of those companies would file Conflict Minerals Reports.⁸¹ Supply-chain complexity was the other source of cost concerns. Many companies are numerous steps removed from the actual mining of the conflict minerals in their products.⁸² The SEC and others predicted that for these companies to ascertain the source of such minerals, they would have to undertake a great deal of costly sleuthing.⁸³ Some also argued that despite companies' best efforts, accurate and comprehensive tracking might prove elusive.⁸⁴

⁷⁸ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,354 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

⁷⁹ See, e.g., CHRIS N. BAYER, A CRITICAL ANALYSIS OF THE SEC AND NAM ECONOMIC IMPACT MODELS AND THE PROPOSAL OF A 3RD MODEL IN VIEW OF THE IMPLEMENTATION OF SECTION 1502 OF THE 2010 DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT 35 (2011), available at http://www.payson.tulane.edu/sites/default/files/3rd_Economic_Impact_Model-Conflict_Minerals.pdf; Letter from Nat'l Ass'n of Manufacturers to the SEC, Initiatives under the Dodd-Frank Act, Special Disclosures Section 1502 (Conflict Minerals), File No. S7-40-102, 24-27 (Mar. 2, 2011), available at <http://www.sec.gov/comments/s7-40-10/s74010-183.pdf> [hereinafter NAM Letter].

⁸⁰ See NAM Letter, *supra* note 79, at 24-27.

⁸¹ See Conflict Minerals, 77 Fed. Reg. at 56,338 n.748.

⁸² See generally JOHN PRENDERGAST & SASHA LEZHNEV, FROM MINE TO MOBILE PHONE: THE CONFLICT MINERALS SUPPLY CHAIN (2009), available at <http://www.enoughproject.org/files/minetomobile.pdf> (outlining the conflict-mineral supply chain).

⁸³ Conflict Minerals, 77 Fed. Reg. at 56,350-54 (analyzing the potential cost of the rules).

⁸⁴ See, e.g., RESOLVE, TRACING A PATH FORWARD: A STUDY OF THE CHALLENGES OF THE SUPPLY CHAIN FOR TARGET METALS USED IN ELECTRONICS 1, 3, 5 (2010), available at http://www.resolve.org/site-eiscm/files/2011/02/Tracing_a_Path_Forward-A_Study_of_the_Challenges_of_the_Supply_Chain_for_Target_Metals_Used_in_Electronics.pdf; OECD STUDY, *supra* note 50, at 59-60; IPC—Ass'n Connecting Elec. Indus., Comments on SEC Proposed Rule on Conflict Minerals, 3, 10 (March 2, 2011), available at

Another prominent concern had to do with unintended consequences. The *New York Times* and *Wall Street Journal* both ran op-eds expressing the worry that the legislation was causing a *de facto* embargo of the Congo region.⁸⁵ This possibility was even the subject of a congressional hearing in 2013.⁸⁶ The editorials argued that companies had stopped sourcing from the region because that was easier than figuring out whether minerals mined from there came from lawful or militarized operations.⁸⁷ According to these critics, legitimate local miners, who are often poor individuals and families, have thus been unintended victims of Section 1502.⁸⁸

A final critique focused on the administrative and procedural side of the legislative mandate rather than its substance. Much has been written about the propriety of delegating human-rights rulemaking to the SEC for inclusion in securities-law filings, which typically include solely information related to the finances and financial prospects of reporting firms.⁸⁹ The SEC Chairwoman herself criticized the legislation for assigning to the SEC, an expert in financial regulation, the task of drafting rules aimed to shame companies into acting in conformity with a social goal.⁹⁰

Supporters of the rules counter all of these concerns. They argue that while the SEC may not be perfectly suited for this task, it can, nevertheless, do much to

<https://www.sec.gov/comments/s7-40-10/s74010-131.pdf>.

⁸⁵ See Aronson, *supra* note 4; *Africa and 'Obama's Embargo': A Provision of Dodd-Frank Boomerangs on the Continent's Poor*, WALL ST. J. (July 18, 2011), <http://online.wsj.com/news/articles/SB10001424052748703956604576109773538681918> [hereinafter *Obama's Embargo*]. See also Marcia Narine, *From Kansas to the Congo: Why Naming and Shaming Corporations Through the Dodd-Frank Act's Corporate Governance Disclosure Won't Solve a Human Rights Crisis*, 25 REGENT U. L. REV. 351, 351 (2012–13) (describing a potential boycott of the Congo region); Laura E. Seay, *What's Wrong with Dodd-Frank 1502?* 14 (Ctr. for Global Dev., Working Paper No. 284, 2012), available at http://www.cgdev.org/sites/default/files/1425843_file_Seay_Dodd_Frank_FINAL.pdf (outlining *de-facto* embargo argument).

⁸⁶ Kevin J. Kelley, *US Congress: Conflict Minerals Law Fuels War in DR Congo*, EAST AFRICAN (May 25, 2013, 3:04 PM), <http://www.theeastafrican.co.ke/news/US-Congress--Conflict-minerals-law-fuels-war--in-DR-Congo-/2558/1862724/-/12iws3sz/-/index.html>; Memorandum from the FSC Majority Committee Staff to the Members of the Committee on Financial Services, (May 16, 2013), available at http://www.srz.com/files/upload/Conflict_Minerals_Resource_Center/052113_Monetary_Policy_and_Trade_Subcommittee_Hearing.pdf.

⁸⁷ See Aronson, *supra* note 4; *Obama's Embargo*, *supra* note 85.

⁸⁸ See Aronson, *supra* note 4; *Obama's Embargo*, *supra* note 85.

⁸⁹ See, e.g., Woody, *supra* note 4, at 1342, 1345; Goad, *supra* note 11.

⁹⁰ See Mary J. White, Chairwoman, U.S. Sec. & Exch. Comm'n, 14th Annual A.A. Sommer, Jr. Corporate Securities and Financial Law Lecture, Fordham Law School: The Importance of Independence (Oct. 3, 2013), available at <http://www.sec.gov/News/Speech/Detail/Speech/1370539864016#.VBYovvk7tcY>.

further human-rights goals.⁹¹ They also contend that concerns about costs, feasibility, and unintended consequences are overstated.⁹² Rather, they see the conflict-minerals rules as a reasonable response to rampant human-rights abuses.⁹³

With equal passion on both sides, it is easy to get caught up in the wrangling and forget that the debate has taken place without the most important piece of information—the corporate filings themselves. The cost and feasibility of compliance, whether companies are abandoning the region, what the consequences are of relying on a securities regulator to enact human-rights legislation—the companies’ first-year disclosures shed tremendous light on all of these issues.

Insights from company filings also have wider implications. U.S. states, including California, Maryland, and Massachusetts, have adopted or are considering adopting conflict-minerals regulations⁹⁴ and both the E.U.⁹⁵ and Canada have issued proposed rules on the matter.⁹⁶ Moreover, conflict minerals are not the only thing potentially buried in corporate supply chains—sweatshops may be there too. One of the reasons for the rancor over conflict minerals may be that the rules could serve as precedent for the use of securities laws to forcefully bring transparency to corners of the supply chain that companies might wish to keep shadowy.⁹⁷ The content of the corporate filings tells a great deal about whether Section 1502 and the SEC rules animating them should serve as the model for a raft of new measures or be dismissed as folly.

⁹¹ See, e.g., Galit A. Sarfaty, *Human Rights Meets Securities Regulation*, 54 VA. J. INT’L L. 97, 115–18 (2013).

⁹² See, e.g., John Bradshaw, *Conflict Mineral Law is Helping Congolese*, WALL ST. J. (July 23, 2011), <http://online.wsj.com/articles/SB10001424053111903461104576458751122272110>; Dipietro, *supra* note 11; *Myth Buster: The Conflict Minerals Provision*, GLOBAL WITNESS (June 2, 2014) <http://www.globalwitness.org/library/myth-buster-conflict-minerals-provision>.

⁹³ See, e.g., Goad, *supra* note 11; *Blood Money and Conflict Minerals*, BLOOMBERG VIEW (Jul. 2, 2014, 1:00PM EDT), <http://www.bloombergvew.com/articles/2014-07-02/blood-money-and-conflict-minerals>.

⁹⁴ Prenekert & Shackelford, *supra* note 10, at 482–84.

⁹⁵ *Proposal for a Regulation of the European Parliament and of the Council Setting Up a Union System for Supply Chain Due Diligence Self-Certification of Responsible Importers of Tin, Tantalum and Tungsten, Their Ores, and Gold Originating in Conflict-Affected and High-Risk Areas*, COM (2014) 111 final (May 3, 2014); Ian Weekes, *Conflict Minerals: New EU Rules Simpler Alternative to US Regulation*, THE GUARDIAN (Mar. 26, 2014), <http://www.theguardian.com/sustainable-business/blog/eu-regulations-conflict-minerals-trade> (describing the EU proposal).

⁹⁶ *The Conflict Minerals Act*, Bill C-486, 2013-62, H.C. Bill C-486 (Can.).

⁹⁷ See generally INT’L CORPORATE ACCOUNTABILITY ROUNDTABLE, “KNOWING AND SHOWING”: USING U.S. SECURITIES LAWS TO COMPEL HUMAN RIGHTS DISCLOSURE (2013), available at <http://accountabilityroundtable.org/wp-content/uploads/2013/10/ICAR-Knowing-and-Showing-Report4.pdf> (setting forth a proposal for human-rights disclosures in securities filings).

II. EMPIRICAL ANALYSIS OF THE SEC FILINGS

This section illuminates the first-year compliance effort. The first part discusses the scope of compliance. It provides statistics on such things as how many companies filed Form SDs, how many filed Conflict Minerals Reports, and which industries were represented. The second drills down on the content of the filings themselves. I present a narrative description and summary statistics detailing how S&P 500 companies went about meeting their compliance obligations.⁹⁸

A. The Scope of the Compliance Effort

As mentioned above, the SEC predicted that nearly 6,000 companies would file conflict-minerals disclosures on Form SD.⁹⁹ It turns out, however, that only 1,319 companies did so.¹⁰⁰ The SEC, therefore, overestimated by about 350%. The agency also predicted that 75% of those companies (about 4,500) would file Conflict Minerals Reports in addition to their Form SDs.¹⁰¹ This time the SEC was close—77% of filers included this report as an exhibit (1,020/1,319). Its initial error, however, means that the SEC still missed the mark on the total number of Conflict Minerals Reports actually filed by well over 300%. The table below summarizes this information.

Table 1: Actual Filings Compared to SEC Estimates

	Number of Form SDs	Number of CMRs
<i>SEC Estimate</i>	5,994	4,496
<i>Actual Number</i>	1,319	1,020
<i>Percent Overestimate</i>	354%	341%

Most agreed on the industries that would fall within the rules' scope. Ernst & Young issued a representative prediction that the most heavily impacted would be "electronics and communications, aerospace, automotive, jewelry, and industrial products."¹⁰² Unlike the SEC's numerical estimates, Ernst & Young's

⁹⁸ Supporting data for the statistics presented in this Part are on file with the author.

⁹⁹ See *supra* text accompanying note 81.

¹⁰⁰ The filing deadline was June 2, 2014. See Form SD, *supra* note 26, at General Instructions B.1–2. All filing statistics are as of August 8, 2014.

¹⁰¹ Conflict Minerals, 77 Fed. Reg. 56,274, 56,356 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

¹⁰² ERNST & YOUNG, CONFLICT MINERALS: WHAT YOU NEED TO KNOW ABOUT THE

projection is consistent with the data. There are two ways a review of the filings can help to assess which industries were most affected. The first is to look at the raw numbers. The table below sorts companies by SIC code (a commonly used system of categorizing companies by industry) and shows which codes generated the most filings.¹⁰³ It reveals that semiconductor manufacturers bore the brunt of the conflict-minerals rules (turning in 118 filings) and that some other top categories were also related to electronics. The automotive industry shows up on the table too, as do communications and industrial products.¹⁰⁴

Table 2: Top Industries by SIC Code

<u>SIC Code & Definition</u>	<u>Number of Filers</u>	<u>Percent Filing¹⁰⁵</u>
3674 (Semiconductors & Related Devices)	118	93%
3845 (Electromedical & Electrotherapeutic Apparatus)	48	76%
3714 (Motor Vehicle Parts & Accessories)	31	83%
3663 (Radio & TV Broadcasting & Communications Equipment)	29	69%
3841 (Surgical & Medical Instruments & Apparatus)	26	56%
7372 (Services – Prepackaged Software)	24	14%
2834 (Pharmaceutical Preparations)	23	13%
3576 (Computer Communications Equipment)	23	77%
3690 (Miscellaneous Electrical Machinery, Equipment & Supplies)	22	83%

NEW DISCLOSURE AND REPORTING REQUIREMENTS AND HOW ERNST & YOUNG CAN HELP 1 (2012), [http://www.ey.com/Publication/vwLUAssets/EY_ConflictMinerals/\\$FILE/EY_ConflictMinerals.pdf](http://www.ey.com/Publication/vwLUAssets/EY_ConflictMinerals/$FILE/EY_ConflictMinerals.pdf). See also 77 Fed. Reg. at 56,284–85.

¹⁰³ See *Division of Corporate Finance: Standard Industrial Classification (SIC) Code List*, U.S. SEC. & EXCH. COMM’N, <http://www.sec.gov/info/edgar/siccodes.htm> (last visited Dec. 12, 2014).

¹⁰⁴ Other notable SIC codes related to these categories include: (i) for electronic, 3672 (printed circuit boards) with 13 filers; (ii) for automotive, 3711 (motor-vehicle and passenger-car bodies) with 13 filers; (iii) for communications, 3661 (telephone and telegraph apparatus) with 16 filers; (iv) for industrial products, 3533 (oil and gas field machinery) with 12 filers and 3560 (general industrial machinery and equipment) with 9 filers.

¹⁰⁵ This column shows, by SIC code, the percentage of public companies traded on major exchanges that filed conflict-minerals disclosures.

Counter to Ernst & Young's prediction, jewelers and aerospace companies are absent. The conflict-minerals rules' bearing on them becomes evident, however, when the data is parsed in another way. The sheer number of filings is revelatory, but so too is the percentage of companies within each SIC code that filed. If a high percentage of companies in an industry make conflict-minerals disclosures, it is safe to say that the industry is heavily impacted. There were only seven filings with jewelry-related SIC codes, but every public company with such a code filed.¹⁰⁶ Similarly, 24 out of 25 public companies in the four aerospace-related SIC-codes filed.¹⁰⁷

Percentages also indicate that not all of the industries in table two were truly the most impacted. As shown in the table, some had a high percentage of filers, while others were simply large industries with a small group of affected firms. For example, 93% of semiconductor makers and 83% of automobile-part makers submitted filings, but only a small percentage of software service providers and pharmaceutical-related companies did so. For these industries, therefore, the rule was not a widespread concern.

On the other hand, surveying the data more broadly reveals a couple of other industries that the rules' greatly affected. There are a variety of SIC codes related to measurement and control instruments. While such devices are used in a wide range of industries—including some of those that Ernst & Young mentions (namely, electronics, industrial products, and aerospace)—the number of filings produced in this area and the high percentage of these companies that filed stands out. Pooling together the four most notable related SIC codes reveals 52 filings out of 57 companies.¹⁰⁸ The other industry that stands out is retail department stores. Pooling the most impacted SIC codes shows that 31 out of 39 filed.¹⁰⁹

Also notable is the range of industries affected. Sixty percent of SIC codes had at least one filing.¹¹⁰ As seen above, in some cases a high percentage of

¹⁰⁶ The following jewelry-related SIC codes are included in the above calculation (with filers out of potential filers in parenthesis): 3910 (jewelry, silverware & plated ware) (1/1); 3911 (jewelry, precious metal) (1/1); and 5944 (retail jewelry stores) (3/3). In addition, two unlisted companies with the SIC code 5944 filed.

¹⁰⁷ The following SIC codes are included in the above calculation (with filers out of potential filers in parenthesis): 3760 (guided missiles, space vehicles, and parts) (3/4); 3812 (search, detection, navigation guidance, aeronautical systems) (11/11); and 3726 (aircraft parts and auxiliary equipment) (10/10).

¹⁰⁸ The following SIC codes were included in this calculation (with filers out of potential filers in parenthesis): 3829 (measuring and controlling devices) (10/11); 3825 (instruments for measurement and testing of electricity and electrical signals) (14/16); 3826 (laboratory analytical instruments) (15/15); and 3823 (industrial instruments for measuring, display, and control) (13/15).

¹⁰⁹ This calculation includes the following SIC codes (with filers out of potential filers in parenthesis): 5311 (retail department stores) (6/6); 5600 (retail apparel and accessory stores) (5/7); 5621 (retail women's clothing stores) (10/13); and 5651 (retail family clothing stores) (10/13).

¹¹⁰ While I have used the more commonly referenced 4-digit SIC codes, there are also

companies within an industry submitted disclosures; in other cases, it was only a small fraction of those doing business in the space.

Finally, during the rulemaking process, commentators expressed special concern for smaller companies.¹¹¹ Because of their size, compliance costs likely loom proportionally larger for each small firm subject to the rules.¹¹² While summary statistics cannot reveal proportionate costs, organizing filers by size does illuminate the extent to which the rules impacted these firms. A showing that they filed in disproportionate numbers would exacerbate cost concerns. Fortunately, the table below suggests that this was not the case. Based on the sample, larger firms actually filed at a slightly higher rate.

Table 3: Filers Sorted by Company Size

	S&P SmallCap 600 ¹¹³	S&P MidCap 400 ¹¹⁴	S&P 500 ¹¹⁵
<i>Filers</i>	194	134	182
<i>Percent Filing</i>	32%	34%	36%

In the end, the most surprising thing the data reveals is the SEC's vast miscalculation regarding the number of likely filers. Otherwise, the data mostly confirms predictions about where the compliance burden would most heavily fall. It also quells some concerns about smaller firms. Compliance may cost such companies proportionally more, but at least the rules do not unintentionally single them out.¹¹⁶

2-digit SIC codes, which group companies into much broader categories. Seventy-three percent of 2-digit SIC codes were represented.

¹¹¹ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,286–87, 56,359–60 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

¹¹² See *id.*; Jeff Schwartz, *The Law and Economics of Scaled Equity Market Regulation*, 39 J. CORP. L. 347, 381–83 (2014).

¹¹³ This is an index of 600 smaller companies. *S&P SmallCap 600*, S&P DOW JONES INDICES, <http://us.spindices.com/indices/equity/sp-600>. (last visited, Dec. 16, 2014).

¹¹⁴ This is an index of 400 mid-sized companies. *S&P MidCap 400*, S&P DOW JONES INDICES, <http://us.spindices.com/indices/equity/sp-400> (last visited, Dec. 16, 2014).

¹¹⁵ See *supra* note 6.

¹¹⁶ Some noted that smaller companies would be affected as members of the supply chain of larger companies. See Conflict Minerals, 77 Fed. Reg. 56,274, at 56,359. The data does not reveal whether smaller firms were disproportionately impacted in this way.

B. The Content of the Compliance Effort

1. The Content of Form SDs

Over 200 firms in the S&P 500 submitted a Form SD. Since the vast majority—88%—supplemented this basic filing with a Conflict Minerals Report as well, the Form SDs themselves were generally pithy references thereto, consisting of one or two sentences.¹¹⁷ When companies determined that they were justified in only filing Form SDs, they included more detail pursuant to the rules' requirements. For these companies, the forms averaged about 3.75 pages.¹¹⁸

In principle, Form-SD-only filers are those that do not source conflict minerals from the Congo region. More specifically, companies were permitted to stop with this form if (i) they determined, based on their RCOI, that their conflict minerals did not originate from the area;¹¹⁹ (ii) their RCOI gave them no reason to believe that the area was the source of their conflict minerals;¹²⁰ or (iii) after conducting due diligence, they determined that conflict minerals that, based on their RCOI, they had reason to believe originated from the Congo region did not actually come from there.¹²¹

The second category was almost universally relied upon as the justification for only filing a Form SD. Only two companies claimed to have affirmatively determined that they did not source from the Congo region.¹²² In addition, not a single S&P 500 firm filed a Form SD, but declined to file a Conflict Minerals Report, based on the final category. Taking the filings at face value, this means that due diligence never convinced a company that it was not sourcing from the Congo when its RCOI pointed in the opposite direction.

According to the rules, firms relying on either of the first two categories as the basis for stopping at the Form SD stage were required to briefly describe their RCOI and their conclusion as part of the form.¹²³ As the above paragraphs suggest, the reported conclusion was almost always that the company had no reason to believe conflict minerals in its products came from the Congo region.¹²⁴ Companies described an RCOI that generally consisted of a survey of their

¹¹⁷ Of the 207 S&P 500 firms that filed conflict-minerals disclosures only 25 filed only a Form SD. Fifty-two of the remaining 182 Form SDs were only one sentence long.

¹¹⁸ Because it includes both cover pages and exhibit lists, this is a generous page-number calculation.

¹¹⁹ See Form SD, *supra* note 26, at Item 1.01(b).

¹²⁰ See *id.*

¹²¹ See *id.* at Item 1.01(c).

¹²² See Meadwestvaco Corp., Specialized Disclosure Report (Form SD), at 2 (May 30, 2014); Mohawk Industries Inc., Specialized Disclosure Report (Form SD), at 2 (Jun. 2, 2014).

¹²³ Form SD, *supra* note 26, at Item 1.01(c).

¹²⁴ See, e.g., Clorox Co., Specialized Disclosure Report (Form SD), at 2 (May 30, 2014); Hershey Co., Specialized Disclosure Report (Form SD), at 2 (June 2, 2014).

suppliers.¹²⁵ Firms varied on the detail they provided about these surveys and the extent to which they described what suppliers actually said in response that led companies to believe their supply chain did not involve the Congo. Hershey, for instance, which uses tin in its decorative containers, merely noted that it surveyed its suppliers and, based on the survey, had no reason to believe its tin comes from the Congo region—and ended the discussion at that.¹²⁶ Altria Group, however, whose e-cigarettes and related chargers contain a small amount of tin and gold, provided far more detail.¹²⁷ It explained that its conclusion was based on a certification by its sole supplier that the conflict minerals in the products it supplies did not originate from the Congo.¹²⁸ Altria also explained that the supplier was able to certify as much by obtaining similar certifications from its sub-suppliers and crosschecking smelter information against CFSI's conflict-free list.¹²⁹

In describing their RCOI, around 40% of companies did not reveal their survey response rate. And a number of those that supplied the information, failed to hear back from everyone. Norfolk Southern, a railroad company, only filed a Form SD even though it had a response rate of just 80%,¹³⁰ and Patterson Companies, a health-care products supplier, did the same with a response rate of just 45%.¹³¹ In doing so, firms like Norfolk Southern and Patterson took advantage of SEC guidance permitting companies to declare that they have no reason to believe they are sourcing conflict minerals from the Congo even with incomplete information in this regard.¹³²

2. The Content of the Conflict Minerals Reports

Conflict Minerals Reports are required of companies that, after conducting due diligence, have been unable to rule out the Congo region as a potential source of their conflict minerals.¹³³ As noted above, almost nine out of ten S&P 500 companies that filed a Form SD also filed such a report. The average length of the

¹²⁵ Rather than conducting a survey, some companies already had, or were able to obtain, supplier certifications regarding the countries of origin of their conflict minerals. *See, e.g.*, Altria Group Inc., Specialized Disclosure Report (Form SD), at 2 (May 30, 2014); Newmont Mining Corporation, Specialized Disclosure Report (Form SD), at 7 (May 31, 2014); LyondellBasell Industries NV, Specialized Disclosure Report (Form SD), at 2 (May 31, 2014).

¹²⁶ Hershey Co., *supra* note 124, at 2.

¹²⁷ Altria Group Inc., *supra* note 125, at 2.

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ Norfolk Southern Corp., Specialized Disclosure Report (Form SD) (June 2, 2014).

¹³¹ Patterson Companies, Inc., Specialized Disclosure Report (Form SD), at 3 (June 2, 2014).

¹³² *See* Conflict Minerals, 77 Fed. Reg. 56,274, 56,312 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

¹³³ *See* Form SD, *supra* note 26, at Item 1.01(c); *supra* text accompanying note 54.

report was about 5.5 pages. Although there was a wide range—with the shortest being one page and the longest being thirty-five—more than 80% were between 2 and 6 pages.¹³⁴ Thus, even though Chairwoman White had expressed concern about “information overload,” the actual reports were usually brief, particularly as securities-law filings go.¹³⁵

The key reporting requirement for firms is to describe their due-diligence efforts, the substance of which must conform to the *OECD Guidance*.¹³⁶ Almost every company noted in its report that it constructed its due diligence in adherence with this framework. About 80% of firms also broke down their diligence description into the five steps outlined therein; company responses are detailed below and in a table at the conclusion of this section.

The first OECD step, “establish strong company management systems,” includes a number of instructions for companies.¹³⁷

*Adopt and disseminate a conflict-minerals policy.*¹³⁸ About three out of four companies established such policies and made them available on their websites. Some included the text in their filings; most only noted that the policy was accessible online.

*Set up a conflict-minerals diligence team.*¹³⁹ Almost 90% of companies reported creating some type of internal cross-functional team to manage their reporting obligations. For example, on its compliance team, the giant aluminum company, Alcoa, included its chief legal officer, among other executives, as well as representatives from each unit involved with products potentially containing conflict minerals.¹⁴⁰

*Establish a system for mapping the conflict-mineral supply chain.*¹⁴¹ Almost all companies followed essentially the same procedure for understanding their supply chain. They identified the suppliers of their conflict minerals and sent them each a survey.¹⁴² The survey was almost always based on a template created

¹³⁴ Much of the difference in length is attributable to whether the firm chose to disclose smelter and refiner information. See *infra* text accompanying note 169.

¹³⁵ White, *supra* note 90.

¹³⁶ See Form SD, *supra* note 26, at Item 1.01(c); *supra* text accompanying notes 35–37.

¹³⁷ See OECD GUIDANCE, *supra* note 37 at 17.

¹³⁸ See *id.*

¹³⁹ See OECD GUIDANCE, *supra* note 37 at 17.

¹⁴⁰ Alcoa Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014).

¹⁴¹ See OECD GUIDANCE, *supra* note 37 at 17.

¹⁴² The OECD and others have noted that companies typically only have a relationship with their direct suppliers. See, e.g., OECD STUDY, *supra* note 50, at 59–60; IPC, *supra* note 84, at 2. The filings are consistent with this observation. Only five companies explicitly noted engaging with indirect suppliers: EMC Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 2–3 (June 2, 2014); Home Depot Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); Intuit Inc., Conflict Minerals Report (Form SD exhibit 1.02) at 2 (June 2, 2014); Kohl’s Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (May 30, 2014); Macy’s Inc., Conflict Minerals Report (Form SD

by CFSI.¹⁴³ This template includes a number of questions about company diligence and policies.¹⁴⁴ Most importantly, it asks whether the supplier's goods contain conflict minerals, where they originate from, and in what facility they are processed.¹⁴⁵ To assist suppliers, it even includes a list of over 200 known smelters.¹⁴⁶

Almost 75% of companies also followed up with suppliers that provided answers that were incomplete or internally inconsistent, as well as those that did not respond at all. About half of companies included information on their ultimate response rate.¹⁴⁷ Based on those that provided this figure, which likely skews the numbers higher, the average was 71%. There was a great amount of variability, however, with a reported low of 21%, a high of 100%, and a standard deviation of 24%.

Seventy companies provided further insight into their supply chain by disclosing the number of conflict-mineral suppliers therein. The range was extraordinary wide, with a high of 40,312 reported by Caterpillar and a low of 2 reported by Intuit.¹⁴⁸ The average number was 2,265; the median was 510 (because of the wide range and Caterpillar's astonishing figure, which was three-times larger than the next highest, the median is likely the better summary of the data).¹⁴⁹

*Incorporate a supply-chain policy in agreements with suppliers.*¹⁴⁹ Companies were less than diligent about including language in supplier agreements. Only about one-half reported doing so.¹⁵⁰ And companies often were not forthcoming about what the language actually said. When companies did include this information, they frequently described the language as calling on suppliers to furnish Dodd-Frank mandated information on conflict minerals when requested.¹⁵¹ A dozen companies went further, though, and included language requiring their suppliers to be conflict free.¹⁵²

exhibit 1.02), at 3 (June 2, 2014).

¹⁴³ The template is publicly available. *Conflict Minerals Reporting Template*, CONFLICT-FREE SOURCING INITIATIVE <http://www.conflictreesourcing.org/conflict-minerals-reporting-template/> (last visited Nov. 25, 2014).

¹⁴⁴ *Id.* at Tab 2, "Instructions."

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at Tab 5, "Standard Smelter Names."

¹⁴⁷ This figure does not include companies that listed a response rate in terms of total spend or some other accounting metric rather than as a percentage of those surveyed.

¹⁴⁸ See Caterpillar Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 1 (May 30, 2014); Intuit Inc., *supra* note 142, at 1.

¹⁴⁹ See OECD GUIDANCE, *supra* note 37, at 17.

¹⁵⁰ Sixteen percent noted, however, that they were planning to do so in the future.

¹⁵¹ See, e.g., Lam Research Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); Medtronic Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (May 29, 2014); Zimmer Holdings Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014).

¹⁵² See, e.g., Ecolab Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 2 (June 2, 2014); Jabil Circuit Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2,

*Establish a grievance mechanism.*¹⁵³ Many companies ignored the OECD instruction to set up a grievance procedure. Less than half reported compliance with this seemingly ministerial requirement.

“Inconsistent” would be the best way to describe firm compliance with the first OECD step and its five subparts. It is also an appropriate description of their responses to the remaining requirements. The second step requires companies to assess risks in their supply chain by analyzing the due-diligence practices of their smelters and refiners.¹⁵⁴ This overlaps with step four, which requires an independent audit of those same facilities, an assessment that would include a review of their due diligence.¹⁵⁵ About 30% of companies failed to address these requirements. Remaining companies were able to identify at least some of these facilities, and addressed these steps by referring to audits done in connection with CFSI’s conflict free smelter program.¹⁵⁶ They reported crosschecking the names of the smelters or refiners identified by their suppliers against CFSI’s list of those that are conflict free. If smelters or refiners were not on the list, companies by and large did not investigate the facility’s due-diligence practices or hire independent auditors to do so.¹⁵⁷

Step three is where companies were required to establish and implement plans to transition existing suppliers to conflict-free sourcing or abandon them.¹⁵⁸ Less than 30% of companies reported that they had outlined a plan.¹⁵⁹ Of those, none reported taking any remedial action.¹⁶⁰ Since step five—publicly reporting on conflict-mineral diligence—is redundant with the rules themselves, all companies that at least filed something complied with this requirement.¹⁶¹

The SEC mandated several other compliance steps beyond the due-diligence reporting. A key requirement was that companies list all products that they had not determined to be conflict free (although, thanks to the Circuit Court

2014); Sigma-Aldrich Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 1 (May 30, 2014).

¹⁵³ See OECD GUIDANCE, *supra* note 37, at 17.

¹⁵⁴ *Id.* at 18, 42.

¹⁵⁵ *Id.* at 19, 47.

¹⁵⁶ See *supra* text accompanying note 50.

¹⁵⁷ The biggest exception was Intel, which reported inspecting 29 processing facilities. See Intel Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 2 (May 22, 2014).

¹⁵⁸ See OECD GUIDANCE, *supra* note 37, at 18; *supra* text accompanying notes 44–47.

¹⁵⁹ This statistic does not include companies that merely reported escalation measures with respect to companies that failed to respond when surveyed regarding their use of conflict minerals.

¹⁶⁰ A handful of companies, in fact, reported that they had adopted policies, but found no instances requiring attention. See, e.g., Boeing Co., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); Emerson Electric Co., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); Microsoft Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014).

¹⁶¹ OECD GUIDANCE, *supra* note 37, at 19.

holding, they were not required to provide any particular label for this list of products).¹⁶² Some companies ignored this part of the rules or provided a general description of their business. But about 70% did include some type of product list. Most produced a list at a high level of generality, describing their products as “apparel” or “household products,” rather than including brand names.¹⁶³ Some firms housed in generic-sounding parent companies included these bland descriptions and left out important identifying information. TJX Companies, for instance, the parent of low-cost departments stores TJ Maxx and Marshalls noted that its “apparel” may contain conflict minerals, but never mentioned the names of its stores.¹⁶⁴

One question raised by the Circuit Court opinion was how companies would note the conflict status of their products now that they were not forced to use the labels “not...‘DRC conflict free’” or “conflict undeterminable.”¹⁶⁵ The vast majority of companies took advantage of this freedom. About 80% chose to give no conclusion as to their products’ conflict status. Often, company products that contain conflict minerals were listed near the beginning of the report. Towards the end, companies then had language indicating that, despite their due diligence, they were unable to determine the conflict status or origin of their products.¹⁶⁶ About 20% of companies, however, were a bit bolder and listed their products as “conflict undeterminable” even though not mandated. Finally, only one firm, Intel, claimed to have a conflict-free product.¹⁶⁷

The rules also required that companies list the smelters and refiners of the conflict minerals in products not found to be conflict free, as well as the countries of origin of those minerals.¹⁶⁸ About 70% of companies failed to provide smelter and refiner information. Many did not list these processing facilities even though they had identified at least a portion of those in their supply chain.¹⁶⁹ Some gave no reason for omitting the names,¹⁷⁰ but many claimed that even though they could

¹⁶² See Form SD, *supra* note 26, at Item 1.01(c)(2), *supra* text accompanying notes 71–77 (discussing the Circuit Court holding).

¹⁶³ See, e.g., Best Buy Co. Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); Nordstrom Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); TJX Companies Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 1 (June 2, 2014). As noted *supra* text accompanying note 59, the SEC did not require the listing of brands. Nevertheless, 12 companies did so.

¹⁶⁴ TJX Companies Inc., *supra* note 163, at 1.

¹⁶⁵ See *supra* text accompanying notes 71–77.

¹⁶⁶ Although unusual, some companies gave no conclusion at all. See, e.g., Procter & Gamble Co., Conflict Minerals Report (Form SD exhibit 1.02) (June 2, 2014).

¹⁶⁷ Intel Corp., *supra* note 157, at 4, 7–8.

¹⁶⁸ Form SD, *supra* note 26, at Item 1.01(c)(2).

¹⁶⁹ As noted *supra* text accompanying note 156, about 70% of companies reported checking their processing facilities against the CFSI conflict-free list. Out of the 134 that claimed to have done so, however, only 50 actually listed their facilities—less than 40%.

¹⁷⁰ See, e.g., Allegion plc, Conflict Minerals Report (Form SD exhibit 1.02) (June 2, 2014); Berkshire Hathaway Inc., Conflict Minerals Report (Form SD exhibit 1.02) (June 2,

identify such facilities, they could not link particular minerals to particular products. According to these companies, when they polled their suppliers, they would get a response at the “company level,” meaning that they were told all of the smelters and refiners that the supplier used.¹⁷¹ In many cases, however, suppliers apparently did not take the additional step of informing companies which of these facilities processed the minerals that made it into the company’s specific products. Companies, therefore, could not match conflict minerals from a particular smelter or refiner with their particular goods, and, based on this, claimed not to have enough information to include facilities in their filings.¹⁷²

On the other hand, about 30% of filers did list the processing facilities in their supply chains, sometimes with the caveat that, for the reason noted above, they could not be sure that their products actually contained conflict minerals from those included.¹⁷³ In addition, some companies that included facility information chose to only list those that appeared on the CFSI conflict-free list, omitting others without explanation.¹⁷⁴

Country-of-origin disclosure was even scarcer. Eighty percent of companies failed to provide this information. As with facilities, some companies provided no explanation for the omission.¹⁷⁵ Others claimed that they could not determine the country of origin for the conflict minerals in their products. While some left it at that,¹⁷⁶ others provided details as to why. When smelters and refiners

2014); Broadcom Corp., Conflict Minerals Report (Form SD exhibit 1.02) (June 2, 2014).

¹⁷¹ See, e.g., Danaher Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 2 (June 2, 2014); Harley-Davidson Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (June 2, 2014); Honeywell International Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (June 2, 2014); Lockheed Martin Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); Reynolds America Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); TJX Companies Inc., *supra* note 163, at 3; Whirlpool Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (May 30, 2014).

¹⁷² See, e.g., sources cited *supra* note 171.

¹⁷³ See, e.g., Ecolab Inc., *supra* note 152, at 3 n.1(a); KLA-Tencor Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (June 2, 2014); Garmin Ltd., Conflict Minerals Report (Form SD exhibit 1.02), at 6 (June 2, 2014); Micron Technology Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 4 n.6 (May 30, 2014).

¹⁷⁴ See, e.g., Kroger Co., Conflict Minerals Report (Form SD exhibit 1.02), at 2 (June 2, 2014); Goodyear Tire & Rubber Co., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); Xerox Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (May 29, 2014).

¹⁷⁵ See, e.g., Covidien plc, Conflict Minerals Report (Form SD exhibit 1.02) (May 30, 2014); Ingersoll-Rand plc, Conflict Minerals Report (Form SD exhibit 1.02) (June 2, 2014); Sigma-Aldrich Corp., *supra* note 152; Teradata Corp., Conflict Minerals Report (Form SD exhibit 1.02) (May 30, 2014); Thermo Fisher Scientific Inc., Conflict Minerals Report (Form SD exhibit 1.02) (May 30, 2014); VF Corp., Conflict Minerals Report (Form SD exhibit 1.02) (June 2, 2014).

¹⁷⁶ See, e.g., Johnson & Johnson, Conflict Minerals Report (Form SD exhibit 1.02), at 5 (May 30, 2014); PVH Corp., Conflict Minerals Report (Form SD exhibit 1.02) (June 2,

process conflict minerals, ores from different regions are combined and the location of origin becomes impossible to track.¹⁷⁷ Thus, the only way to trace the source of a conflict mineral in a product is to identify the smelter from which it came. If, for example, a particular smelter only processed minerals from Asia, then a company downstream from the smelter could know that is where its raw materials came from. Since companies could not match smelters to products, they claimed to be unable to match products to countries as well.¹⁷⁸

As with facilities, despite these obstacles, some companies included a list of countries, sometimes with a qualification to reflect their uncertainty about the exact match to their products.¹⁷⁹ Curiously, of the filers that provided country-of-origin information, some did not include any from the Congo region.¹⁸⁰ If none of their facilities sourced from there, however, the companies would not have had to file a Conflict Minerals Report in the first place.

The histogram below summarizes the country-of-origin information for companies reporting sourcing from the Congo area. It is a small sample because so few companies listed specific countries therein, but Rwanda and the DRC stand out as the ones noted most frequently. They are cited 40% more than Burundi, the next most commonly mentioned.

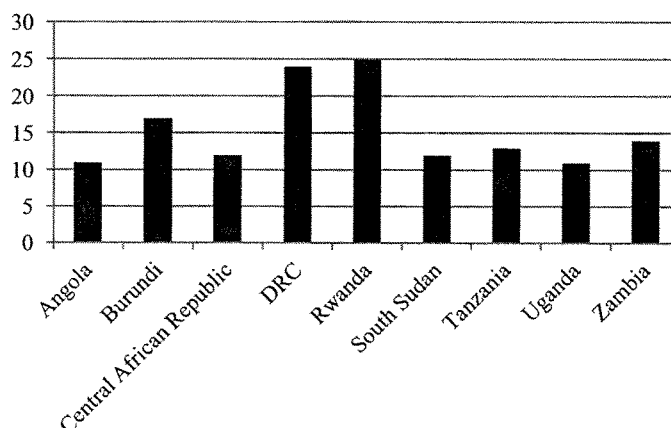
2014); Stanley Black & Decker Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (June 2, 2014).

¹⁷⁷ Conflict Minerals, 77 Fed. Reg. 56,274, 56,321 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400); PRENDERGAST & LEZHNEV, *supra* note 82, at 6.

¹⁷⁸ See, e.g., Danaher Corp., *supra* note 171, at 2; Honeywell International Inc., *supra* note 171, at 5; Medtronic Inc., *supra* note 151, at 3; Lockheed, *supra* note 171, at 4; TJX Companies Inc., *supra* note 163, at 3. Although companies stopped at this point, there is an additional layer of complexity in that even if a particular smelter is matched to a particular product, country-of-origin information may still prove out of reach. Smelters often process minerals from more than one region. PRENDERGAST & LEZHNEV, *supra* note 82, at 6. In this case, even if a company identifies one of its smelters, the company cannot know for sure if minerals from a particular country processed in that smelter made it into its specific products. After the metals are liquefied, melded together, and then apportioned to different manufacturers, who is to say which country's minerals ended up in which company's products.

¹⁷⁹ See, e.g., Cerner Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); Garmin Ltd., *supra* note 173, at 6; Micron Technology Inc., *supra* note 173, at 6.

¹⁸⁰ See, e.g., McKesson Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4–5 (June 2, 2014); Sandisk Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (May 30, 2014).

Figure 1: Country-of-Origin Information of Conflict Minerals

The rules' attention to country of origin includes one additional requirement—this one relates to process rather than results. Companies were required to describe their efforts to “determine the mine or location of origin [of their conflict minerals] with the greatest possible specificity.”¹⁸¹ This aspect of the rule was essentially shrugged off. More than one-half of filers ignored it. Those that did address it frequently referenced their due diligence and RCOI descriptions as their efforts to determine this information.¹⁸²

Finally, the rules called for all companies using the “conflict undeterminable” category to list the steps they were taking or planned to take to improve their diligence and to mitigate the risk that they source from militarized mines.¹⁸³ Despite no longer having to choose any particular label, almost 90% of companies had a section on this. Many referenced specific OECD requirements, like updating their supplier contracts, as things they planned to do.¹⁸⁴ Many others contained platitudinous language about continuing to “engage with” their suppliers

¹⁸¹ Form SD, *supra* note 26, at Item 1.01(c)(2).

¹⁸² See, e.g., L Brands, Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); Newell Rubbermaid Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 6 (May 30, 2014); Zimmer Holdings Inc., *supra* note 151, at 4.

¹⁸³ See Form SD, *supra* note 26, at Item 1.01(c)(1)(iii).

¹⁸⁴ See, e.g., Agilent Technologies, Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 6 (June 2, 2014); Autodesk Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 4 (June 2, 2014); C.R. Bard, Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 2 (June 2, 2014); Garmin Ltd., *supra* note 173, at 7.

on the conflict-minerals issue.¹⁸⁵ The following table summarizes the contents of S&P 500 Conflict Minerals Reports.

Table 4: S&P 500 Company Compliance Steps in Conflict Minerals Reports

<u>Conflict-Minerals Rules Compliance Steps</u>	<u>Percent of Companies Taking Step Listed</u>
<i>Requirement to Describe Due Diligence</i>	-
Noted <i>OECD Guidance</i>	98%
Described Due Diligence in Terms of <i>OECD Guidance's</i> 5 Steps	82%
<i>Step 1</i>	-
Enacted Conflict-Minerals Policy	85%
Made Conflict-Minerals Policy Publicly Available	75%
Created Internal Conflict-Minerals Team	87%
Surveyed Suppliers	99%
Reported Response Rate	47%
Used CFSI Template for Survey	92%
Followed up on Incomplete/Inconsistent Responses & Nonresponses	73%
Conducted Site Visits of Suppliers and Processing Facilities ¹⁸⁶	4%
Amended Supplier Agreements	51%
Put in Place a Grievance Procedure	47%
<i>Steps 2 and 4</i>	-
Incorporated Results of CFSI Smelter Audits	73%
Conducted Own Processing Facility Audit	0% ¹⁸⁷
<i>Step 3</i>	-
Reported Findings to Senior Management	55%

¹⁸⁵ See, e.g. Autodesk Inc., *supra* note 184, at 4; Cummins Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 6 (May 30, 2014); Harley-Davidson Inc., *supra* note 171, at 7.

¹⁸⁶ Apple, General Electric, Intel, and Qualcomm reported visiting smelters. See Apple, Conflict Minerals Report (Form SD exhibit 1.02), at 2 (May 29, 2014); General Electric Co., Conflict Minerals Report (Form SD exhibit 1.02), at 7 (June 2, 2014); Intel Corp., *supra* note 157, at 2; Qualcomm Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 6 (June 2, 2014).

¹⁸⁷ Intel was the only company to do so. See Intel Corp., *supra* note 157, at 2.

Adopted a Risk Management Plan	29%
<i>Step 5</i>	-
Reported on Due Diligence	100%
<i>Other Requirements</i>	-
Listed Future Risk-Mitigation Efforts	87%
Described Products Not Found to be Conflict-Free	71%
Listed Processing Facilities	31%
Listed Countries of Origin	20%
Described Efforts to Determine Mine or Location of Origin with Specificity	40%
<i>Conflict-Status Categorization</i>	-
Conflict Free	1%
Not Conflict Free	0%
Conflict Undeterminable	21%
"Unable to Determine" or No Specific Conclusion	77%

What stands out in the above chart is the frequency of low compliance percentages. While in some cases companies may have good—or at least defensible—reasons for omitting information, the end result is a set of Conflict Minerals Reports that reveal quite little about conflict-mineral supply chains.

C. What the SEC Filings Reveal About the Conflict-Minerals Rules

The nature of compliance provides particular insight into the costs and benefits of the conflict-minerals rules. For most companies, compliance appears to have involved little cost. Due diligence essentially boiled down to sending out a survey created by a third party and checking certain results against a third-party-generated list. Companies also took procedural steps, like setting up a conflict-minerals policy, an internal team, and a grievance mechanism. No doubt all of this takes some time, particular for those companies with a wide range of products and a complex supply chain, but the burden appears relatively insubstantial. That the final work product—the filings themselves—were brief and devoid of detail further supports the idea that little effort went into compliance with these rules.

It is true that the rule contemplates some trickle-down costs. As noted above, companies required to file these reports are often many levels removed from the actual mines.¹⁸⁸ Thus, for a company's suppliers to provide meaningful information when requested, these firms must poll their own suppliers. To illuminate an entire supply chain, this process would have to continue all the way to the source, which necessarily adds expense.

¹⁸⁸ See *supra* note 82 and accompanying text.

But compliance often did not follow this idealized conception. In describing their survey results, many companies noted that numerous suppliers responded with inconclusive answers.¹⁸⁹ A survey reply along the lines of, “we don’t know,” entails little cost and eliminates expenses further up the chain. And answers like this should be expected. Unless suppliers are themselves subject to the SEC rules or otherwise contractually obligated to follow up, there is nothing that says they have to assist in a company’s diligence efforts. They might do so to maintain good relations with customers that push them, but buyers have little reason to exert much force. From a risk-averse company’s perspective, no answer is better than one that links minerals to conflict mines. Thus, while costs extend past the actual filers, it is easy to overstate how far they reach.

Finally, costs in the aggregate must be lower than anticipated, at least by the SEC, because, as noted above, the agency overestimated the number of filers by around 350%.¹⁹⁰ Given the perfunctory effort and unexpectedly small number of filers, the true costs of compliance were likely far less than critics warned.

As might be expected, the lower costs appear to be accompanied by lower benefits. There were certainly no bombshells. Not a single company admitted sourcing from a militarized mine; no products or companies could be singled out as conflict-mineral offenders. Meanwhile, scant few appeared worthy of praise—conflict-free declarations were almost nonexistent.¹⁹¹ Naming and shaming

¹⁸⁹ See, e.g., Ball Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014) (“We have elected not to present smelter and refiner names that have been identified by suppliers in this report due to the number of nonresponders and incomplete responses that were received to our survey”); Caterpillar Inc., *supra* note 147, at 1 (“The majority of suppliers surveyed either provided an incomplete or inconclusive response or did not provide any response.”); Costco Wholesale Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 1 (June 2, 2014) (“a number of suppliers failed to respond.”); Qualcomm Inc., *supra* note 186, at 5 (“The vast majority of our direct suppliers reported unknown countries of origin for their necessary conflict minerals.”).

¹⁹⁰ See *supra* text accompanying notes 100–101.

¹⁹¹ See *supra* note 167 and accompanying text. Arguably, those companies that chose only to file a Form SD could be described as conflict free. This has a few problems, though. The first is that such companies were not the target of the rules. The idea was to encourage responsible sourcing from those involved in the region rather than celebrate those with no connection. Second, 23 out of the 25 S&P 500 companies that only filed a Form SD claimed they were entitled to do so because they lacked a reason to believe that the conflict minerals they used were from the Congo. See *supra* text accompanying note 122. Under SEC rules, they were allowed to make such a claim, so long as none of their survey responses, or other information at their disposal, indicated otherwise. See Conflict Minerals, 77 Fed. Reg. 56,274, 56,312–13 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400). But this is not the same as being certified as conflict free. It is a claim based on supply-chain ignorance rather than knowledge of conflict-free sourcing. As noted *supra* text accompanying notes 130–132, some companies claimed they lacked a reason to believe that they were sourcing from the Congo despite limited knowledge of their supply chain. Finally, neither of the S&P 500 firms that actually established that their

requires that activist consumers and shareholders be able to distinguish between good actors and bad, so that they can take action against the latter. But the information in the reports does not provide sufficient information to get such campaigns off the ground. The filings lack the type of specifics that could inspire investors to reallocate their money or consumers to reassess their purchasing habits. Almost every company fell into the category of having a reason to believe they were sourcing from a country in the Congo region, but being unable to tell whether their minerals were really from there, or despite being from there, were actually conflict free. Disclosures such as these provide paltry basis for change.¹⁹²

It could be argued that despite their inconclusiveness, the reports are still of some use, because activists can use them to differentiate among companies based on how diligently they complied. The compliance effort itself can be used as a measuring stick even if the substance of the filings provides little basis on which to discriminate.¹⁹³ There is certainly some truth to this, but sorting companies based on compliance is a high cost, partly subjective, endeavor. The benefits also pale in comparison to true naming and shaming. It is much less salient to criticize a company for cursory compliance than it is to identify it as sourcing from a mine linked to human-rights abuses. Compliance-based sorting is also only beneficial in extreme cases. Because many companies complied in an almost identical fashion, this metric is only useful to call out those that turned in a truly excellent effort and those that all but ignored the rule.

Finally, benefits from this approach exist only on the margin. There are ways companies can demonstrate their commitment to conflict-free sourcing other than through careful compliance. They can, for instance, join industry organizations committed to this goal. In fact, before the conflict-minerals rules went into effect, the Enough Project had ranked electronics companies based on

supply chain did not involve the Congo were from heavily impacted industries like electronics, where such a declaration would be most meaningful.

¹⁹² In a forthcoming paper, Robert Eccles and George Serafeim suggest that “even without stakeholder engagement,” disclosures may serve an “internal transformation function.” Robert Eccles and George Serafeim, *Corporate and Integrated Reporting: A Functional Perspective*, in STEWARDSHIP OF THE FUTURE 3 (Lawler et al. ed., forthcoming 2015). In the conflict-minerals context, this theory would suggest that the disclosure mandate may be beneficial, regardless of successful naming and shaming, because companies may change what they do in order to change what they report. While this is a provocative argument, there is scant evidence that it reflects what happened here. Rather than change their behavior, companies buried it in jargon.

¹⁹³ Global Witness, for example, makes this argument. See *Myth Buster*, *supra* note 92. Responsible Sourcing Network published a pilot study ranking 51 filers. It sorted them into three groups based on their level of compliance. See RESPONSIBLE SOURCING NETWORK, MINING THE DISCLOSURES: AN INVESTOR GUIDE TO CONFLICT MINERALS REPORTING 35 (2015), available at <http://static1.l.sqspcdn.com/static/f/432032/26314376/1434388831653/mining-the-disclosures-2014.pdf?token=Tn%2FLtdmEOWjjELkOADM RZ1%2F%2BIU%3D>.

activities like this.¹⁹⁴ While compliance may be a cleaner signal, the fact remains that it is only its added benefit that matters—the extent to which this tells us something we did not already know. If achieved, the true hope of the conflict-minerals rules—to allow us to sort companies based on where they source—would have greatly expanded our awareness.

The calm that greeted the public dissemination of the reports supports the conclusion that they lack the content necessary to bring about the intended social change. A few complained about the lack of substance,¹⁹⁵ but there has been no semblance of public outrage. The press noticed the revelation, completely unrelated to conflict minerals, that a few companies were using a gold refinery in North Korea in violation of the U.S. embargo.¹⁹⁶ But companies are claiming that this was simply a reporting error.¹⁹⁷

All of this suggests that the results of the conflict-minerals rules are a faint shadow of the controversy that has surrounded the initiative ever since Congress approved the original legislation over four years ago. This is a troubling conclusion, not only for those concerned with conflict minerals and the human-rights abuses related thereto, but also for those looking at the regulation as a model for future supply-chain transparency efforts. If there is a silver lining, however, it is that the data at least provides a starting point for an investigation into what went wrong.

III. Why the Conflict-Minerals Filings Proved Unilluminating

A review of the filing data suggests that the conflict-minerals rules have so far been a disappointment. This conclusion leads to two related questions: what explains the lackluster first-year filings and what, if anything, should be done to lay the groundwork for better results in the future? In this Part, I address the former question. I argue that the flawed and incomplete disclosures can be attributed to

¹⁹⁴ See generally ENOUGH PROJECT, GETTING TO CONFLICT FREE: ASSESSING CORPORATE ACTION ON CONFLICT MINERALS (2010), available at http://www.enoughproject.org/files/publications/corporate_action-1.pdf.

¹⁹⁵ See, e.g., Joe Mont, *First Conflict Minerals Reports Lack Substance, If Filed at All*, COMPLIANCE WEEK (June 10, 2014), <http://www.complianceweek.com/news/news-bulletin/first-conflict-minerals-reports-lack-substance-if-filed-at-all-0>; Elena Popina, *Intel, HP Seen as Exceptions in Conflict-Mineral Reports*, BLOOMBERG BUSINESSWEEK (June 3, 2014), <http://www.businessweek.com/news/2014-06-02/intel-hp-seen-as-exceptions-in-conflict-mineral-reports>; *As June 2nd Conflict Minerals Deadline Approaches, Global Witness Warns That First Reports Lack Substance*, GLOBAL WITNESS (May 29, 2014), <http://www.globalwitness.org/library/june-2nd-conflict-minerals-deadline-approaches-global-witness-warns-first-reports-lack>.

¹⁹⁶ See Jamila Trindle, *U.S. Companies Still Puzzling Over North Korean Gold Question*, FOREIGN POLICY (June 5, 2014), http://www.foreignpolicy.com/articles/2014/06/05/us_companies_still_puzzling_over_north_korean_gold_question.

¹⁹⁷ *Id.*

difficulties inherent in the naming-and-shaming approach to regulation, a failure to draft rules that maximize this approach's potential despite such difficulties, and a halfhearted corporate compliance effort. This theory of regulatory failure, along with information gleaned from the filings themselves, then informs the reform proposals I present in the Part that follows.

A. The Difficulty of Naming and Shaming Conflict-Mineral Users

The central shortcoming of the conflict-minerals filings is that they fail to provide the information necessary to name and shame companies sourcing from militarized mines. This is likely because a number of factors conspire against successful naming and shaming in this arena. The approach works best when the culpable can be clearly identified and separated from the rest, and when the latter face severe public sanction.¹⁹⁸ The use of conflict minerals does not present the ideal circumstances for either.

Parties are easier to single out for undesirable conduct when the wrongful behavior can be identified without the cooperation of those same parties. Those fearful of being named and shamed have a large incentive to make the relevant information difficult to obtain. Naming and shaming conflict-mineral users through self-reporting was thus destined for resistance.

Naming and shaming also works better if the repercussions for culpability are significant. This incentivizes parties to undertake the steps necessary to clear their name. Companies, however, could not be sure this was the case with conflict minerals. Undoubtedly, some shareholders and customers are deeply concerned about the humanitarian crisis in the region and are committed to ethical sourcing.¹⁹⁹ But conflict minerals do not appear to be a top social issue. The legislation did not stem from a public outcry; nor has one greeted the leaden filings.²⁰⁰ If people are not clamoring for the elimination of conflict minerals, then companies are less likely to undertake potentially costly efforts to avoid their use.

A regulatory approach that relies on companies to implicate themselves is an inherently weak starting point, which likely provides part of the answer for why the reports are unsatisfying. Weak starting points, however, are commonplace in

¹⁹⁸ See Scott L. Cummings, *The Internationalization of Public Interest Law*, 57 DUKE L.J. 891, 1014 (2008) (naming and shaming has more "resonance" when the activity "arouses international outrage").

¹⁹⁹ See John Bagwell, *Congo Activism in the Face of the Chamber of Commerce's Lawsuit*, RAISE HOPE FOR CONGO (Oct. 26, 2012), <http://www.raisehopeforcongo.org/blog/post/congo-activism-face-chamber-commerce%E2%80%99s-lawsuit-0> (discussing a shareholder proposal at Cisco related to conflict minerals); Dipietro, *supra* note 11 (discussing support for the conflict-minerals rules from socially conscious investing groups); *List of Initiatives*, RAISE HOPE FOR CONGO, <http://www.raisehopeforcongo.org/content/initiatives/list-initiatives> (last visited Nov. 24, 2014) (discussing support for the rules on college campuses).

²⁰⁰ See Woody, *supra* note 4, at 1325–27.

extraterritorial contexts such as this, where more hardline alternatives—like embargos or direct intervention—present a host of more significant problems. The challenge then is to recognize and respond to the difficulties inherent in the naming-and-shaming approach. As discussed below, lawmakers did poorly in this regard.

B. Shortcomings in the Implementation of Naming and Shaming

Even though naming and shaming presents difficulties in this context, the rules could have been drafted so as to provide a great deal more illumination. The manifold gaps in the reports suggest that the rules failed to perceive and take steps to mitigate the incentives for minimal compliance and failed to structure the compliance obligations in a way that maximizes transparency.

One way to incentivize compliance is to severely penalize failure to do so. This would tilt the corporate cost-benefits analysis more in favor of the rules. But neither Congress nor the SEC included any specific fines for delinquent or evasive companies. Failure to make the appropriate conflict-minerals filing or to include the required content is subject to the same sanction as any other missed reporting obligation. The basic penalty is a \$100 per day of tardiness.²⁰¹ Rather innocuous.

The penalties escalate for more egregious conduct, but these are unlikely to be triggered. For example, missing reporting obligations could lead to a suspension of trading.²⁰² But the SEC only has authority to pursue this action to protect investors²⁰³—and their wellbeing as traditionally conceived is not implicated here. The final rules also make clear that the filings are subject to so-called Section 18 liability.²⁰⁴ This cause of action, however, which is triggered by material misstatements, is rarely used because of its strict requirements.²⁰⁵ While fraud liability under Rule 10b-5 still looms,²⁰⁶ firm conduct so far does not rise to this level.

It is also highly questionable whether the SEC would expend resources ferreting out and bringing enforcement proceedings against defiant companies. As noted above, the Chairwoman herself expressed regret over her agency's mandated

²⁰¹ Securities Exchange Act of 1934 § 32(b), 15 U.S.C. § 78ff(b) (2011).

²⁰² 15 U.S.C. 78l(j).

²⁰³ *Id.* For a broader discussion of penalties available to the SEC for failure to meet reporting obligations, see 1 BRENT A. OLSON, 1 PUBLICLY TRADED CORPORATIONS: GOVERNANCE & REGULATION § 6:28 (2d ed. 2014); ROBERT J. WILD, CORPORATE COMPLIANCE SERIES: DESIGNING AN EFFECTIVE SECURITIES AND CORPORATE GOVERNANCE COMPLIANCE PROGRAM § 1:154 (2013).

²⁰⁴ Conflict Minerals, 77 Fed. Reg. 56,274, 56,304 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400).

²⁰⁵ See *id.* at 54,349 n.813; DAY PITNEY LLP, CONFLICT MINERALS PROVISION OF THE DODD-FRANK ACT MAY RESULT IN SECTION 18 CIVIL LIABILITY 1–2 (2012), available at http://www.daypitney.com/news/docs/dp_4294.pdf.

²⁰⁶ 17 C.F.R. § 240.10b-5 (2013).

involvement with these rules.²⁰⁷ Commissioners of the SEC have also made their dissatisfaction clear.²⁰⁸ All of this sends a signal to companies that compliance with the conflict-minerals rules is low on the agency's radar. Indeed, it is hard to picture an agency that sees itself as the investor's guardian devoting its limited resources to the pursuit of companies that fail to draft meaningful human-rights disclosures. The absence of stricter penalties and the hints of SEC indifference likely contributed to an impression that noncompliance would be tolerated.

Not only did the rules fail to signal the importance of compliance, they also lacked key transparency requirements for the companies to comply with. One problem that becomes evident in the filings is the level of generality at which the companies described their products. If the rules are at least partially aimed at consumers, then they need to be able to tell which particular goods are problematic. But the high-level descriptions found in company filings make this difficult.²⁰⁹ The vexing ambiguity can be traced back to the SEC's reluctance to provide specific guidance to companies on how to describe their products.²¹⁰

Asking companies to disclose the facilities and countries of origin of their conflict minerals also proved problematic. The key miss was to frame the rule in such a way as to suggest that this information only need be provided if the companies could actually link specific minerals to specific products. As noted above, the structure of corporate supply chains and the nature of the information provided to downstream companies prevented many filers from making a clean connection, giving them plausible grounds for leaving this information out.²¹¹ Failure to appreciate how this central disclosure requirement fit with the pragmatics of supply-chain diligence is thus a big reason why the filings are so thin.

This same oversight also undermined the sorting ability of the rule. Even though most companies chose not to use the "conflict undeterminable" label, almost all of them nevertheless concluded that they were unable to determine the conflict status of their products.²¹² This is perfectly understandable given the above. If companies could not link specific minerals to specific products, then the conflict status of such products would be undeterminable. It, therefore, appears that a subtle wording choice not only explains the omission of key supply-chain information, but also why so many of the companies' conclusions were essentially identical.²¹³

²⁰⁷ See *supra* note 90 and accompanying text.

²⁰⁸ See Kester, *supra* note 11.

²⁰⁹ Anything that drives up the transaction costs of discovering which companies and products are problematic dampens the efficacy of the rules. See Schwartz, *supra* note 112, at 376 (discussing a transaction-cost boundary on market forces).

²¹⁰ See *supra* text accompanying note 59.

²¹¹ See *supra* text accompanying notes 171–172.

²¹² See *supra* text accompanying notes 166–167.

²¹³ The universality of this conclusion also suggests that companies did not view the chance of being one of the first to be certified as conflict free to be worth the expense of

What also stands out from reading the reports is that they are muddled, redundant, and difficult to compare. Much of this can be traced back to the structure of the rules. One of the rules' key features is the distinction between two concepts—the reasonable country of origin inquiry and due diligence.²¹⁴ In the SEC's eyes, the latter is supposed to be a more in depth version of the former.²¹⁵ But in practice the concepts essentially merge. It would not be efficient for companies to conduct two rounds of inquiry; it makes sense for them to ask for all of the information at once. And this is what they did. The same CFSI survey was used to shed light on all of the relevant sourcing information.²¹⁶

The merging of the two concepts led companies to repeat themselves in their filings. It also made filings challenging to compare, as some companies listed an activity as part of its RCOI while others listed the same thing as part of its due diligence. Compliance would have been more streamlined had the SEC never invented the RCOI concept.

This ephemeral distinction is also the conceptual undergirding of another core redundancy—the two-tiered reporting structure. The idea was that companies would report on their RCOI in the Form SD²¹⁷ and their due diligence in the Conflict Minerals Report.²¹⁸ Since these two investigations have collapsed into one, there is no need to have two separate reports. One filing that discusses a company's supply-chain inquiry would suffice.

Yet more redundancy is built in via the requirement that companies describe their efforts to uncover the "mine or location of origin [of their conflict minerals] with the greatest possible specificity."²¹⁹ This obligation seems to be completely swallowed by a company's duty to describe their due diligence into "the source and chain of custody of [the company's] conflict minerals."²²⁰ Perhaps there is an abstract distinction in that companies are to go into more depth in describing this singled-out aspect of their diligence, but this did not play out in the reports and it is difficult to conceptualize how it could.

Finally, the *OECD Guidance* is itself a source of confusion and duplication. As noted above, step two of the guidance, identify and assess supply chain risk, and step four, perform audits of smelters in the company supply chain,

the prerequisite audit.

²¹⁴ See Form SD, *supra* note 26, at Item 1.01(a) (pertaining to the RCOI); *id.* at Item 1.01(c) (pertaining to due diligence); *supra* text accompanying notes 28–56.

²¹⁵ See Form SD, *supra* note 26, at Item 1.01(c).

²¹⁶ Also, as noted earlier, although the rules left open the possibility that companies could reverse the conclusion of their RCOI in their due diligence, this never occurred. See *supra* text accompanying notes 122–123. This further suggests the merger of these two inquiries in practice.

²¹⁷ Form SD, *supra* note 26, at Item 1.01(a)-(b).

²¹⁸ *Id.* at Item 1.01(c).

²¹⁹ *Id.* at Item 1.01(c)(2).

²²⁰ *Id.* at Item 1.01(c).

focus on understanding company processing facilities.²²¹ In practice, most firms addressed both steps by referencing the results of the CFSI audits.²²² To signal compliance with each, some firms noted twice in their reports that they consulted the CFSI audit list.²²³ The final OECD step—publicly report on due diligence—is completely redundant with the regulations themselves.²²⁴ Out of an abundance of caution, however, some firms listed this step and reported meeting it by filing the Conflict Minerals Report.²²⁵

The failure to give the rules teeth and the drafting oversights that allowed companies to avoid providing key information stand out as the central problems with implementation of the naming-and-shaming approach. The sloppiness in the rules, however, is troubling in its own right because it bred reports that suffered from the same flaw. By paving the way for disclosures that were difficult to absorb and compare, the regulations undermined the very market processes on which they depend for their efficacy.

C. Reluctant Compliance

The final explanation for the opaque filings has to do with the behavior of the regulated entities. Companies responded to the rules' flawed incentive structure in the way one would expect: they put forth an uninspired compliance effort. Firms interpreted language in the rules in ways that frustrated their transparency goals, they simply failed to comply with the enumerated requirements, and many failed to file at all.

For the most part, companies took full advantage of the flexibility granted to them in how to describe their products. Firms were not required to list their goods at the highest level of generality; they did so because they could. And in so doing, companies made it more difficult for activist consumers to single out products for boycott. Firms also overwhelmingly embraced a narrow reading of the requirement to report facility and country-of-origin information with respect to their products. The claim that they could not link specific minerals to their goods may be true, but failing to include this information when they had it at their disposal certainly runs counter to the spirit of transparency that motivated the rules. More firms could have acted like the few that provided this data with a caveat to reflect their uncertainty.

²²¹ See *supra* text accompanying notes 154–155.

²²² See *supra* text accompanying note 156.

²²³ See, e.g., EMC Corp., *supra* note 142, at 6; Macy's, Inc., *supra* note 142, at 4; Western Digital Corp., Conflict Minerals Report (Form SD exhibit 1.02), at 5-6 (June 2, 2014).

²²⁴ OECD GUIDANCE, *supra* note 37, at 19.

²²⁵ See, e.g., Ford Motor Co., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (May 28, 2014); Google Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); Under Armour, Inc., *supra* note 189, at 4.

While it is perhaps unsurprising that companies largely chose to hue to the letter of the law rather than its spirit, in this case there was also a high level of noncompliance. Table 4 illustrates just how spotty the overall compliance effort was. Only about one-half of companies complied with the OECD instructions to set up a grievance mechanism and alter their supplier contracts.²²⁶ And only 30% said they set up a risk management plan.²²⁷ Moreover, companies unable to determine the conflict status of their minerals were required to report on what they will do better in the future. Many listed action items that were clearly required in year one, implicitly acknowledging a compliance gap.²²⁸ The enthusiasm with which companies dove into the rules' loopholes projects an air of cynicism and their failure to comply with even ministerial requirements of the *OECD Guidance* reflects a sort of casualness not usually seen in SEC filings.

And all of this says nothing of those who filed nothing. As mentioned above, far fewer companies filed reports than the SEC anticipated.²²⁹ The agency arrived at its figure by adding up companies within industries most likely to have products containing conflict minerals.²³⁰ Although the SEC could have made some adjustments, the approach is reasonable, and it is hard to see how this logic could have led the agency so far astray.²³¹ The most obvious explanation seems to be that companies failed to comply.²³²

While the above analysis supports the claim that corporations are to blame for the unsatisfying first-year filings, it also reveals that the full answer is more complex. They simply responded to the incentives baked into the naming-and-shaming approach by taking advantage of ambiguities and oversights in the rules implementing it. Thus, while we may want corporations to act like saints, their

²²⁶ See Table 4, *supra* Part II.B.2.

²²⁷ See Table 4, *supra* Part II.B.2.

²²⁸ See *supra* text accompanying note 184.

²²⁹ See Table 1, *supra* Part II.A.

²³⁰ The SEC's estimate of 5,994 total filers comes from aggregating the estimates of three different types of filers: domestic issuers (which file Form 10-Ks), foreign private issuers (which file Form 20-Fs), and Canadian issuers that utilize the Multijurisdictional Disclosure System (which file Form 40-Fs). See Conflict Minerals, 75 Fed. Reg. 80,948, 80,966 & n.176 (proposed Dec. 23, 2010) (to be codified at 17 C.F.R. pts. 229, 249b) (estimating 5,551 10-K filers); *id.* at 80,967 & n.179 (estimating 377 20-F filers); *id.* at 80,967 & n.182 (estimating 66 40-F filers).

²³¹ Even though the final rules were narrower than those proposed, the SEC did not revise its estimate. See, e.g., Conflict Minerals, 77 Fed. Reg. 56,274, 56,350 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400) (eliminating the requirement that mining companies file conflict-minerals disclosures).

²³² The data analyzed herein sheds little light on which companies are flaunting the rules by failing to file conflict-minerals disclosures. The only hint comes from the analysis of filers by industry SIC code. See Table 2 *supra* Part II.A. and text accompanying notes 106–109. Where a high percentage of companies in a particular industry filed, it may be the case that the non-filers are violating the rules. Follow-up with these companies is likely the only way to tell whether their conduct is justified.

shortcomings here can be seen as a reasonable, if not eminently rational, response to the incentive structure regulators created.

IV. SUPPLY-CHAIN TRANSPARENCY THROUGH REFORM

The first-year filings failed to provide the information necessary for the conflict-minerals rules to work as intended. Knowing this, there are a spectrum of alternatives available to Congress and the SEC. In this Part, I analyze and ultimately reject the two extreme options—maintain the status quo and repeal the rules. Rather, I argue that the information contained in the filings, together with the theory of regulatory failure just described, suggest how the rules can be reformed in a way that sheds a great deal more light on the conflict-mineral supply chain without increasing compliance costs.

A. Maintain the Status Quo?

At this point, one potential avenue would be to do nothing, to maintain the status quo. There are several potential arguments for this approach—all of which are addressed below—but the main one is that the conflict-minerals rules need to be given time to work. It could be argued that over time companies will improve their compliance efforts and the international institutional framework necessary for conflict-free sourcing and proper due diligence will continue to improve. Sticking with what we have, therefore, makes sense.

While it would be nice if this were true, such hopes appear fanciful. There is little reason to suspect that the corporate response or the institutional structure would significantly improve if the current rules were left in place. In coming years, corporations would be faced with the same incentive to shirk that they faced this year. And the muted response to their subpar first-year reports would give them no reason to try harder. In fact, their resolve in token compliance would have been strengthened because their suspicion that nobody would call them out on their behavior would have been proven right.

A potential counterargument is that things will be different in coming years because the rule itself becomes more stringent once the ramp-up period expires. According to this logic, the stricter requirements would provide more transparency even if companies remain uncooperative.

Looking at how the rules would change, however, shows that this is a false hope. Substantively, the expiration of the ramp-up would mean that corporate due-diligence efforts would have to be audited.²³³ While this would surely improve the quality of the reports somewhat, the results would likely be insignificant. An audit means that companies would have to check all of the boxes in the *OECD Guidance*. Companies would be forced to put in place risk management plans and

²³³ Form SD, *supra* note 26, at Item 1.01(c)(1)(ii)(A); *id.* at Instruction 2 to Item 1.01.

grievance mechanisms.²³⁴ But changes like these do not address the core problems in the rules. More uniform adherence to these procedural technicalities would do little to improve supply-chain transparency.

There is also a distinct possibility that the Circuit Court holding gets overruled.²³⁵ The ruling is under reconsideration, and there is even the possibility of Supreme Court review after that.²³⁶ If the rules were returned to their original form, would this render them effective?

A decision to overrule would mean the return of the SEC's labeling regime in the mandated reports. Companies would be required to list their products as "not... 'DRC conflict free'" or "conflict undeterminable." Adding such labels, however, would do little to improve corporate filings. Even though the majority of companies did not use any particular label in this year's version, it was clear that almost all of them would have chosen "conflict undeterminable." Forcing them to actually say this changes nothing.

Assuming the rules were restored to their original form, when the ramp-up period expired, this "conflict undeterminable" category would become unavailable. All of the companies that today fall into this category would thus be forced to say they are "not... 'DRC conflict free.'" While this label has more of a negative connotation, firms would be permitted to explain that they are choosing it because it is the only option for those that have not been able to definitively establish that they are conflict free.²³⁷ These explanations should negate any impact of the change. The bottom line is that so long as the nature of corporate compliance remains unchanged, it does not matter what company products are labeled in their reports.

If things are allowed to continue as they are, the other side of the equation—the institutional framework supporting conflict-free sourcing—is also unlikely to improve. The key is the CFSI audit program. If the number of smelters certified as conflict-free grows, then more companies would be able to report that they are conflict free and there would be more choices for those firms that aspire to join them.²³⁸ But the notion that this program would grow with the current rules in

²³⁴ OECD GUIDANCE, *supra* note 37, at 17–18.

²³⁵ See Yin Wilckzek, *In Strategic Move, SEC Petitions for Rehearing of Conflict Minerals Case*, BLOOMBERG BNA (June 6, 2014), <http://www.bna.com/strategic-move-sec-n17179891084/>.

²³⁶ See Hunton & Williams LLP, *When Can Companies Be Forced to Say What They Don't Want To Say?*, LEXOLOGY (Oct. 9, 2014), <http://www.lexology.com/library/detail.aspx?g=dc7c1399-3c5f-4657-b3df-59572dc5dfc4>.

²³⁷ Conflict Minerals, 77 Fed. Reg. at 56,322 n.562.

²³⁸ At last count, there were 128 certified smelters and refiners: 22 CFSI-certified tin facilities, *Conflict-Free Tin Smelters*, CFSI, <http://www.conflictreesourcing.org/tin-conflict-free-smelters/> (last updated Dec. 15, 2014); 41 CFSI-certified tantalum facilities, see *Conflict-Free Tantalum Smelters*, CFSI, <http://www.conflictreesourcing.org/tantalum-conflict-free-smelters/> (last updated Dec. 17, 2014); 9 CFSI-certified tungsten facilities, *Conflict-Free Smelter Program Tungsten Smelter List*, CFSI, <http://www.conflict>

place is dubious. CFSI audits are expensive for the smelters and refiners.²³⁹ It is possible that those firms that think the expense worthwhile have already gone through the process. Also, firms may have borne the expense expecting there to be more demand from U.S. firms for conflict-free minerals. Given the nature of compliance, this appears to have been a miscalculation. The filings contain little to suggest corporations are significantly altering their sourcing practices.²⁴⁰ Such a tepid reaction to the rules must give pause to those smelters and refiners considering whether to go through the costly process. Moreover, audits must be renewed annually.²⁴¹ In light of the above, processing facilities that are currently certified as conflict free may question whether it is worth the effort and expense to maintain their status. While Section 1502 may have provided a jolt to the audit effort, if nothing is done to the current rules, it would likely face headwinds in the future.

There is also one further argument that could be made for the status quo, which is that the rules are actually working. One could claim that although the reports have proven to be unhelpful, the specter of compliance has already led to important changes. There have been claims, for instance, that the mere presence of the legislation has led to a two-tiered market in certain conflict minerals, with those traceable to conflict-free mines going for much more than the rest.²⁴² The discount applied to untraced minerals aligns with the rules' goal of decreasing the funding available to Congolese militant groups.²⁴³

Even if this is so, however, the lack of substance in the reports changes everything. Now that it is evident that companies are not taking the rules seriously, the price discrepancy—and any other positive changes along these lines—should evaporate. The increased price of traceable minerals can be viewed as a bubble.

freesourcing.org/tungsten-conflict-free-smelters/ (last updated Dec. 13, 2014); and 56 CFSI-certified gold facilities, *Conflict Free Gold Refiners*, CFSI, <http://www.conflict-freesourcing.org/gold-conflict-free-smelters/> (last updated, Dec. 10, 2014).

²³⁹ *Despite Mounting Costs, Conflict-Free Minerals Catch On*, MONITOR GLOBAL OUTLOOK (July 7, 2014), <http://www.monitorglobaloutlook.com/Briefings/2014/07/conflict-minerals> (describing costs of up to \$1 million per year).

²⁴⁰ Cf. Christoph Vogel & Ben Radley, *In Eastern Congo, Economic Colonialism in the Guise of Ethical Consumption?*, WASH. POST (Sept. 10, 2014), <http://www.washingtonpost.com/blogs/monkey-cage/wp/2014/09/10/in-eastern-congo-economic-colonialism-in-the-guise-of-ethical-consumption/> (“almost no corporate stakeholder . . . has visibly engaged in eastern Congo to help Congolese actors comply with regulations, improve labor security, or increase decent livelihoods.”).

²⁴¹ LEVIN ET AL., *supra* note 37, at 44 tbl.5.

²⁴² FIDEL BAFILEMBA ET AL., *THE IMPACT OF DODD-FRANK AND CONFLICT MINERAL REFORMS ON EASTERN CONGO’S CONFLICT* 2, 8 (2014), available at <http://www.enoughproject.org/files/Enough%20Project%20-%20The%20Impact%20of%20Dodd-Frank%20and%20Conflict%20Minerals%20Reforms%20on%20Eastern%20Congo%E2%80%99s%20Conflict%2010June2014.pdf>; but see LEVIN ET AL., *supra* note 37, at 38 n. 138 (citing field research indicating that uncertified minerals sometimes go for higher prices).

²⁴³ See *id.* at 2.

Like overzealous stock-market investors predicting a market shift, it looks as though intermediaries in the conflict-mineral supply chain predicted that U.S. companies would demand conflict-free minerals to comply with the rules. Anticipating their ability to pass on the cost, they bid the prices up. But the reports give scant indication that companies are moving in this direction. That being the case, the disappointing reports should cause the price of conflict-free minerals to decline like stock prices when subpar earnings are announced.

The status quo, therefore, has little appeal. Most likely, companies would continue to go through the motions without providing much illumination, and in so doing they would stall any momentum for change that Section 1502 had originally engendered.

B. Repeal the Conflict-Minerals Rules?

Another socially minded Dodd-Frank rule, the requirement that companies disclose the pay ratio of their executives versus their rank-and-file employees, is under congressional reconsideration.²⁴⁴ Perhaps the conflict-minerals rules should be next. There are two arguments for repeal—that the rules are ineffective and that they do more harm than good.

One could argue that since the conflict-minerals filings are not yielding the type of information that would lead to market pressure and reformed sourcing, they should be rescinded. Even though countless dollars and hours have been spent on drafting and compliance, these costs are sunk and therefore irrelevant.

Repeal is likely better than maintaining the status quo, where money would continue going toward compliance with little coming in return. But such a response is premature. Rather than look at the conflict-minerals rules as an all-or-nothing proposition, these rules can be seen as version 1.0. An improved iteration can be produced based on the results of this one. As I argue below, while the filings shed little light on conflict-mineral supply chains, they do provide insight into how the rule itself can be salvaged. If the rules are adjusted and evidence shows that they are still not working, then further reform or even repeal may be the best solution.

There is also an argument that the rules should be repealed because they are actually worsening conditions in the Congo. As I noted earlier, some have lamented that these rules have caused a *de facto* embargo of the region, which has plunged local conflict-free miners deeper into poverty.²⁴⁵

The idea that the rules are having this unintended consequence is worrisome. But it is also contestable. The Enough Project, for instance, claims that they have seen “electronics companies ... expanding [their] minerals sourcing

²⁴⁴ Emily Chasan, *Legislators Take Aim at Dodd-Frank Pay-Ratio Rule*, WALL ST. J. BLOG (June 20, 2013, 3:15 AM), <http://blogs.wsj.com/cfo/2013/06/20/legislators-take-aim-at-dodd-frank-pay-ratio-rule>.

²⁴⁵ See *supra* notes 85–88 and accompanying text.

from the Congo.”²⁴⁶ In discussing the *de facto* embargo, a leading critic acknowledges that, “as with most data in the ... Congo,” displacement figures “are extremely difficult to verify” and “[t]here are no polls or surveys showing ... reliable figures on how many miners are out of work” as a result of Dodd-Frank.²⁴⁷

There is also a problem with causation. A lot has happened in the Congo that might explain any movement away from Congolese minerals or displacement of local miners.²⁴⁸ In 2010, for instance, the president of the DRC issued a ban on mining in two of the country’s provinces.²⁴⁹ Moreover, there have been an astounding number of international efforts, aside from Dodd-Frank, aimed at cutting off funding from militarized mines in the region.²⁵⁰ These efforts might also explain any decreased demand for Congolese minerals.²⁵¹

In addition, the idea that there is a *de facto* embargo attributable to Dodd-Frank conflicts with the data in the disclosures. Nothing therein suggests that companies are abandoning the region.²⁵² If there is really some semblance of a *de facto* embargo and Section 1502 is to blame, it is not because U.S. companies are leaving the Congo, it is because intermediaries have anticipated that they will, and have adjusted their practices accordingly. Once it becomes clear that companies are not actually demanding conflict-free minerals, the pressure to abandon the region should dissipate. In a strange twist, because the rules in their current form are ineffective, it makes little sense to blame them for a *de facto* embargo or adverse effects on individual and family mines.

Finally, even if Dodd-Frank or other transparency efforts are decreasing demand for Congolese minerals, the answer is not necessarily to dismantle such initiatives. Another alternative is to complement these programs with others that provide assistance to displaced miners. Indeed, human-rights groups and scholars

²⁴⁶ BAFILEMBA ET AL., *supra* note 242, at 3. *See also Myth Buster*, *supra* note 92 (“Major international companies have recently begun to engage in responsible sourcing programs in some areas of Congo.”).

²⁴⁷ Seay, *supra* note 85, at 14 n.33.

²⁴⁸ *See generally* BAFILEMBA ET AL., *supra* note 242.

²⁴⁹ Seay, *supra* note 85, at 13.

²⁵⁰ *See* DOMINIC JOHNSON, NO KIVU, NO CONFLICT? 9–12 (April 2013), *available at* http://goodelectronics.org/news-en/new-report-from-pole-institute-about-conflict-minerals-from-congo/at_download/attachment.

²⁵¹ *See* KEN MATTHYSEN & ANDRÉS ZARAGOZA MONTEJANO, ‘CONFLICT MINERALS’ INITIATIVES IN DR CONGO: PERCEPTIONS OF LOCAL MINING COMMUNITIES 8 (2013), *available at* http://www.ipisresearch.be/publications_detail.php?id=426.

²⁵² In fact, some companies acknowledged the risk of a *de facto* embargo and pledged not to contribute. *See, e.g.*, Microchip Technology Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 5 (June 2, 2014); Seagate Technology plc, Conflict Minerals Report (Form SD exhibit 1.02), at 9 (May 30, 2014); Uroplasty, Inc., Conflict Minerals Report (Form SD exhibit 1.02), at 3 (June 2, 2014); *cf.* Ken Tysiac, *Conflict Minerals Rule Poses Compliance Challenge*, J. OF ACCOUNTANCY (Apr. 2013), *available at* <http://www.journalofaccountancy.com/Issues/2013/Apr/20127083.htm> (“So far, it appears that companies are trying to source their minerals without causing harm to the entire region.”).

that have raised concerns about Dodd-Frank's potential *de facto* embargo have pointed to programs such as these—rather than repeal—as the right solution.²⁵³

C. Reforming the Conflict-Minerals Rules

The first-year filings were a failure in that they did not produce information capable of being used to name and shame companies. But they made two contributions that are essential to a well-grounded reform proposal. They revealed what companies were able to uncover about their supply chain even with minimal effort and they provided the basis for identification of the problematic aspects of the regulatory framework. An understanding of what companies can ascertain and a theory of where the current rules missed the mark are the key precursors to reform.

1. Getting the Incentives Right

The first thing that needs to be addressed is the incentive problem at the heart of the rules. Companies naturally resist revealing negative—or even potentially negative—information about themselves, but this is necessary for the rules to work.²⁵⁴ As noted above, one way to combat this predilection is to provide for specific and large penalties for noncompliance with these rules.²⁵⁵ Companies would be inclined to put more effort into their due diligence if they suspected real penalties for failure to do so. Along the same lines, companies seem to be under the impression that, when it comes to conflict minerals, the SEC is not inclined to pursue the remedies currently at its disposal.²⁵⁶ The agency has a built in mechanism to reverse this impression: it frequently signals its enforcement priorities to the securities bar and can include conflict minerals the next time that it does so.²⁵⁷

2. Disclose or Explain

The substance of the rules also needs to be changed. The overarching framework should be one where firms are required to disclose key aspects of their supply chain and, where they lack the necessary information, are provided the opportunity to explain the gap and detail any anticipated steps to close it.

²⁵³ See BAFILEMBA ET AL., *supra* note 242, at 14–15; Seay, *supra* note 85, at 25.

²⁵⁴ See *supra* Part III.A.

²⁵⁵ See *supra* text accompanying notes 201–206.

²⁵⁶ See *supra* text accompanying notes 207–208.

²⁵⁷ See, e.g., Christian Bartholomew et al., *Weil Gotshal Discusses SEC Speaks 2014: Charting a New Course for Enforcement Efforts*, CLS BLUE SKY BLOG (Apr. 1, 2014), <http://clsbluesky.law.columbia.edu/2014/04/01/weil-gotshal-discusses-sec-speaks-2014-charting-a-new-course-for-enforcement-efforts/>.

The entire effort starts with the firm's products, which must be clearly disclosed. The discretion given to companies today to describe their products as they see fit should be eliminated.²⁵⁸ For consumers to better discern what is happening on a product-by-product basis, they need specific brand information. The SEC should, therefore, require that companies include it.

The next step is to mandate that companies link these clearly identified products to the smelters and refiners in their supply chain. One thing that becomes clear in the reports is the importance of these processing facilities to the conflict-free effort. Even though companies avoided disclosing their smelters and refiners, many acknowledged that they could identify them.²⁵⁹ This is crucial because, thanks to the CFSI audit program, companies need go no further to determine that their products are conflict free. The processing facility is the place where top-down and bottom-up diligence converge. The CFSI audit determines whether the supply chain reaching this point is conflict free.²⁶⁰ Since conflict minerals cannot enter the supply chain after processing, once companies identify that their products are only incorporating materials from conflict-free smelters or refiners, they can declare their goods to be conflict free as well.

A key argument against the rules has been that it is almost impossible for companies to determine the conflict status of their products.²⁶¹ While it is perhaps not feasible for companies to reach all the way to the mines on their own, the CFSI audit program means they do not have to. Supply-chain transparency is therefore possible, but the rules need to be specifically structured around the only realistic way to achieve it.

This means that the requirements should be changed so that companies are clearly required to reveal smelter information. All that needs to be done to close the loophole in the current rules is to require that companies list all smelters and refiners in a particular product's supply chain regardless of whether they can determine if minerals from a particular processing facility made it into the particular product. The rules should further instruct firms to organize their list according to the type of mineral processed in each facility. Firms would thus be required to describe each product that incorporates conflict minerals, the particular conflict minerals in each product, and the smelters or refiners that potentially processed each of those minerals.

Not all companies would be able to provide smelter and refiner information. Their suppliers might be unwilling to disclose or unwilling to take the steps necessary to make such data available.²⁶² To address this, the rules should

²⁵⁸ See *supra* note 59 and accompanying text.

²⁵⁹ See *supra* text accompanying note 156.

²⁶⁰ See BAFILEMBA ET AL., *supra* note 242, at 7; BAYER, *supra* note 79, at 28.

²⁶¹ See *supra* note 84 and accompanying text.

²⁶² Many companies with gold in their supply chain would have difficulty identifying their processing facilities. A large portion of the world's gold is sold through the Shanghai Gold Exchange or commingled therewith. This market, however, does not keep records with regard to where its gold is processed or sourced. See COMMERCE REPORT, *supra* note

give companies unable to provide this information the opportunity to explain why and what steps they are taking to improve their ability to provide it in the future. Future plans, for instance, might include switching suppliers or including contractual language in future supply agreements mandating that suppliers provide processing-facility information.

In addition, the key piece of information is whether the smelters and refiners that a company lists have been CFSI-certified as conflict free. Corporations should therefore be required to disclose whether this is the case. Since CFSI makes their results publicly available, all companies that have identified their smelters and refiners, should also be able to provide their conflict status.²⁶³

Since only 128²⁶⁴ out of over 300 smelters and refiners have been audited,²⁶⁵ large companies with diverse product lines likely source from both audited and unaudited processing facilities. To accommodate these companies, the rules should provide firms that have unaudited facilities in their supply chain the opportunity to explain why and if they have any plans to change their sourcing practices.²⁶⁶

The same disclosure rules should apply for more detailed information as well, including the country and mine of origin of a company's conflict minerals, and whether mines in a corporation's supply chain are under the control of armed groups. Many companies declined to reveal country-of-origin information based on a narrow reading of the rules rather than ignorance.²⁶⁷ Moreover, CFSI-certified smelters and refiners must have provided both country and mine-of-origin information to the CFSI auditor.²⁶⁸ And to certify the smelter, the auditor must have been able to verify who controls the mines. This shows that information all the way back to the mine is available at least with respect to some products for some firms. It is just a question of getting it into the reports. If companies are able to obtain this information, they should sort it by smelter. If they are unable to, then just as above, they should be given the opportunity to explain why and what, if anything, they are doing to further future efforts to obtain this information.²⁶⁹

21, at 2.

²⁶³ See *Conflict-Free Smelters & Refiners*, CFSI, <http://www.conflictreesourcing.org/conflict-free-smelter-refiner-lists/> (last visited, Dec. 16, 2014).

²⁶⁴ See *supra* note 238.

²⁶⁵ The exact number is unknown. The GAO counted 287, but said there are believed to be almost 500. GAO REPORT, *supra* note 43, at 3–4. The Commerce Department identified over 300. See COMMERCE REPORT, *supra* note 21, at tables 1–4.

²⁶⁶ Companies that have both certified and uncertified smelters in their supply chain—but process most of their conflict minerals through the former—may wish to explain that this is the case.

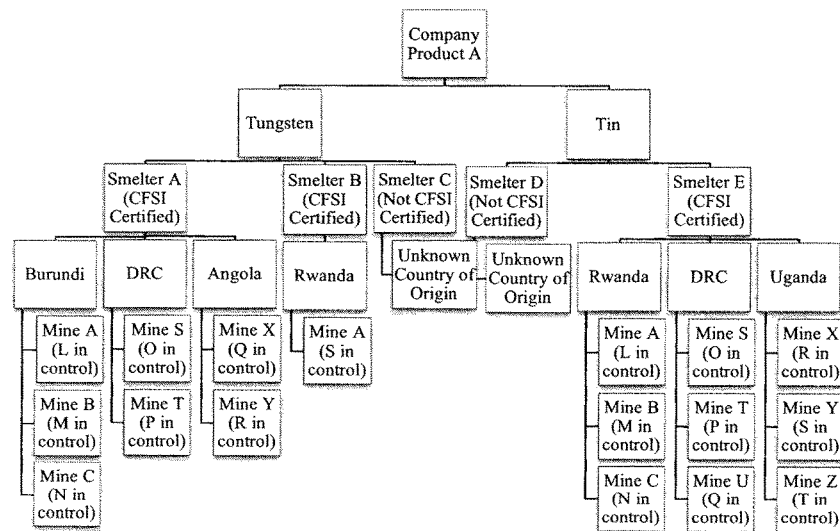
²⁶⁷ See *supra* text accompanying notes 177–178.

²⁶⁸ See BAFIEMBA ET AL., *supra* note 242, at 7; BAYER, *supra* note 79, at 28.

²⁶⁹ CFSI publicly identifies certified smelters, but it only makes country-of-origin information available to its members. *Reasonable Country of Origin Inquiry Data*, CFSI,

All of this required information should be presented in a flowchart or outline depending on the complexity of a company's supply chain. A flowchart would start with a particular product. It would then list the conflict minerals therein, processing-facility information (along with audit status), country-of-origin information, and mine-of-origin information (along with what group is in control). As shown in the example below, the flowchart would clearly show the lineage of each mineral in each product. Many companies would likely have blanks in this diagram. In a narrative accompanying it, companies would be free to explain them and describe what steps, if any, they are taking to better their understanding. An outline would follow the exact same organization and provide the exact same opportunity for explanation.

Figure 2: Conflict-Minerals Flowchart



<http://www.conflictreesourcing.org/rcoi-data/> (last visited Dec. 22, 2014). Membership costs \$5,000 annually. *Benefits of Membership in the Conflict-Free Sourcing Initiative*, CFSI, <http://www.conflictreesourcing.org/membership/> (last visited Dec. 22, 2014). In addition, some companies reported that CFSI tells its members the category of countries from which a smelter or refiner sources rather than the specific nation. See, e.g., Ecolab Inc., *supra* note 152, at 5–6. If this is the case, then CFSI would have to be willing to share more information to provide the level of granularity sought in this proposal.

By asking for detailed supply-chain information, this approach allows companies that are conflict free to stand out. It also exposes those that are using facilities that have chosen not to go through the CFSI audit and those that know little about their supply chain. This is actual naming and shaming. Consumers and shareholders would be able to sort companies based on real information about their sourcing practices and diligence efforts.

In addition, under this approach, there would be no need for any type of complex labeling regime. In fact, the SEC's attempt to sort companies into categories was a mistake, a gross oversimplification of supply chains and corporate efforts to disentangle them from human-rights abuses. Companies have varying levels of commitment to the idea of ethical sourcing and have had varying levels of success in achieving it. The SEC's labels fail to appreciate these distinctions and create categories that are at best unhelpful and at worst deceptive. Rather than force things into categories, this proposal brings out the details of corporate supply chains. The only labeling rules should be that companies should not be permitted to call their products conflict free unless they have only conflict-free smelters and refiners in their supply chain and should not be able to declare themselves conflict-free unless all of their products meet this criterion.

As noted throughout the discussion above, the rules contain opportunities for companies to explain gaps in their knowledge or shortcomings in their sourcing practices. This feature causes the approach set forth above to resemble a so-called "comply-or-explain" framework. With comply-or-explain regulation, companies are given the choice to comply with a legal rule or explain why they are opting out.²⁷⁰ Similarly, under this disclose-or-explain approach, companies are required to disclose the information that they can obtain or explain why they are uninformed. They are also given the opportunity to provide context for revelations that might cast them in a negative light. Giving companies this opportunity allows consumers and shareholders to better assess which companies align with their social goals. Firms with legitimate excuses and tangible plans would come out looking much better than those that respond with platitudes. Requiring detailed disclosures, but providing ample opportunity for explanations, effectuates the overarching purpose of the rules in that it provides as much information as possible for concerned stakeholders.

In addition, even though this revised template would result in far more transparency, it would not require additional effort by the regulated entities. It is not as if companies chose to disclose abstract product categories because it would be too expensive to ascertain and reveal the brands within. Companies were intentionally vague to reduce any chance of reprisal. Similarly, many companies were able to identify smelters and countries of origin, but chose not to disclose. It would not cost these companies more to make this information available.

²⁷⁰ See Mark J. Roe, *Legal Origins, Politics, and Modern Stock Markets*, 120 HARV. L. REV. 460, 474–75 (2006).

In fact, this reform proposal blesses certain cost-saving practices that firms employed in the first year and saves firms money in other ways. The original rules—and much of the controversy surrounding them—were built on the premise that individual firms would undertake costly efforts to trace their conflict minerals back to their source. In practice, firms outsourced the expense to CFSI. This makes sense because centralizing efforts through an institutional mechanism is both a more efficient and effective approach. Under this proposal, therefore, firms would be explicitly relieved of any obligation to replicate CFSI's efforts.

Reliance on this institutional mechanism also calls into doubt the for-now-delayed requirement that firms have their due-diligence efforts audited. When firms are expected to trace minerals all the way to mines on their own, it may make sense to require oversight of this process. If this is now the job of an institution designed solely for this purpose—and firms only need to conduct sufficient diligence to identify their smelters and refiners—then firm-level audits seem unnecessary. Firms should be permitted to have their efforts audited if they think the cost is worth the signal of seriousness it sends to the public, but it should not be mandated.²⁷¹

The structure set out above would also eliminate the redundancies and clutter that mar the current framework and drive up compliance costs. As alluded to above, the distinction between the RCOI and due diligence is meaningless and should be abandoned.²⁷² The way to fix this is to eliminate the RCOI concept. Under the new framework, companies would just conduct due diligence into their supply chains and disclose the results in an outline or flowchart. If companies are not sourcing from the region, this would become clear from the information therein. Once firms conclude that they are not involved in the area, they would not be required to inquire into the identity of the mines in their supply chains or into who runs those operations. They could also report that they are conflict free. Once the RCOI is eliminated, there is also no need for a separate Form SD and Conflict Minerals Report. One filing would suffice.²⁷³

Under this revised framework, there would be no need to rely on the *OECD Guidance*. Much of what it calls for would be naturally included in company efforts to explain gaps in their supply chain. A risk-mitigation plan, for instance, would be something concerned companies would no doubt describe if forced to reveal the use of uncertified processing facilities. Instead of incorporating

²⁷¹ Another problem with the audit requirement is that, once in place, it would create an incentive for firms to source from outside the region, thereby amplifying concerns about a *de facto* embargo. As currently written, firms that only file a Form SD because they do not obtain minerals from the conflict area are not required to obtain an audit and are thereby saved the expense. See Form SD, *supra* note 26, at Item 1.01(c)(1)(ii) (requiring an audit for the Conflict Minerals Report).

²⁷² See *supra* text accompanying notes 214–216.

²⁷³ Along the same lines, the redundant requirement to describe efforts to determine country- and mine-of-origin information with specificity should be deleted. See *supra* text accompanying notes 219–220.

the entirety of the *OECD Guidance*, the SEC could point companies to it as a useful resource; disclosure mandates regarding specific details on corporate diligence could take its place. For example, firms should be required to discuss whether they used the CFSI questionnaire or some other mechanism to trace their conflict minerals. If they surveyed their suppliers, they should be required to disclose their follow-up procedures and their response rate. Such information would not necessarily appear in corporate efforts to explain supply-chain gaps, but should be included because it illustrates the seriousness of a company's investigation.

The chief way this reform proposal improves upon the current rules is by doing a better job of fitting the regulatory demands to the realities of conflict-mineral supply chains and corporate due-diligence practices. The filings largely fail in their intended purpose, but they provide a sliver of transparency that gives insight into how the rules can be mended to achieve this fit. Though the reform proposal presented in this Part is by no means a panacea, it has the potential to yield far more promising information and drive more ethical sourcing practices.²⁷⁴ At the same time, because it asks companies to reveal more rather than do more, it should not drive up compliance costs—its simplified structure may even translate to savings.

3. Concerns with the Disclose-or-Explain Template

The most poignant concerns about this approach revolve around the content and trustworthiness of the resulting filings and the potential unintended consequences of the new rules. While the worries have merit, none is severe.

The first concern is that corporations would respond to the disclosures mandated in this proposal with the same type of unintelligible boilerplate with which they greeted the current rules. While this is the course some would no doubt choose, the incentive structure in this template should make doing so much less prevalent. By raising the stakes of noncompliance, the proposed rules would make it less appealing to include nonresponses in corporate filings. In addition, under the current rules, companies can blend in by offering evasive and vague answers. This would not be an option, however, under the proposal.

²⁷⁴ It is beyond the scope of this article to analyze fully whether each of the suggested changes would require amended legislation or could be accomplished solely through SEC rulemaking. Many of the suggestions, however, appear to be within the SEC's power. For instance, the RCOI concept, the reliance on the *OECD Guidance*, and the two-tiered reporting structure were all SEC inventions. On the other hand, some of the recommendations herein would need congressional approval. The audit requirement, for example, was specifically included in the Section 1502. See Dodd-Frank, Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213 (2010) (codified at 15 U.S.C. § 78m(p) (2012)). The SEC would not have authority to unilaterally remove it. See *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837, 842–44 (1984) (setting out the boundaries of agency discretion).

Most importantly, companies would have to disclose their use of smelters or refiners that have not been cleared as conflict free. Many companies probably would have a good reason for relying on such facilities. For example, they may be in a long-term supply contract with firms that source from them. They may also plan to reassess this relationship when the contract expires. This is information that, under the proposed rules, corporations would want to include. Failure to do so would risk sanction by dissatisfied consumers or shareholders. This stands in contrast to today where companies can avoid providing any of this information with little risk of blowback. Because the proposed rules would clearly ask for the most important information, and provide companies with ample opportunity to explain weaknesses, those that shirk would be far easier to identify. They would, therefore, be far less tempted to do so.

Another concern has to do with the faith put in the CFSI audit program. CFSI is an industry organization and there is the potential that it seeks to appease industry members by setting a low bar for certification. Indeed, the ability of CFSI to successfully declare smelters and refiners conflict free to a certain extent belies the claims of those who argue that successful tracing of minerals to their source is nearly impossible.²⁷⁵

While this is not a concern that can be dismissed, at this point it is speculative. The risk at issue here—really one of industry capture—is always present with regulation. Regulation occurs in spite of industry capture, and all lawmakers can do is acknowledge the risk and design institutional countermeasures. While capture potential may appear particularly pronounced in this case, there has been no indication that the audit process is compromised. Human rights groups celebrate its actions.²⁷⁶ Moreover, compliance with the rules would reveal whether anything sinister is occurring. The rules require disclosure not only of the conflict-free label, but also of the country and mine of origin of the

²⁷⁵ See *supra* note 84 and accompanying text. The Commerce Department, which Dodd-Frank instructed to list “all known conflict mineral processing facilities worldwide,” caused a stir when it claimed that it could not ascertain which facilities were contributing to armed conflict in the Congo. See Dodd-Frank, § 1502(d)(3)(c); COMMERCE REPORT, *supra* note 21, at 1; Emily Chasan, ‘Conflict Minerals’ Too Hard to Track, *Commerce Department Says*, WALL ST. J. (Sept. 5, 2014, 5:57PM), <http://blogs.wsj.com/cfo/2014/09/05/conflict-minerals-too-hard-to-track-commerce-department-says/>. This admission should be given little weight, however, because the department appears to have merely aggregated preexisting smelter lists rather than conduct independent research and analysis. See COMMERCE REPORT, *supra* note 21, at 1–3.

²⁷⁶ See, e.g., *Conflict-Free Smelters for All Four Conflict Minerals*, ENOUGH PROJECT (Jan. 31, 2014), <http://www.enoughproject.org/blogs/conflict-free-smelters-all-four-conflict-minerals-first-time>; see also LEVIN ET AL., *supra* note 37, at 47 (describing CFSI, the institution responsible for the audit program, as “one of the most utilized and respected resources for companies addressing conflict minerals issues.”). A part of the conflict-free certification process, iTSCI, which monitors mines and traces conflict minerals, see *id.* at 36–37, has been criticized—not for lack of independence—but because of the costs it imposes on miners and its limited reach. See Vogel & Radley, *supra* note 240.

minerals processed in the smelters and refiners. NGOs with knowledge of the Congo would be able to see if any of the minerals—and therefore any of the processing facilities—had been mischaracterized.

A final concern has to do with the potential for a *de facto* embargo. I argued above that because the current rules appear to be unsuccessful in altering corporate sourcing practices, there is little concern that Dodd-Frank compliance is a long-term threat to legitimate mining in the Congo.²⁷⁷ The *de facto* embargo concern resurfaces if the current rules are swapped out for ones that work. In particular, this proposal creates pressure on companies to choose conflict-free smelters and refiners. Perhaps many of these processing facilities are conflict free because they do not source from the region.²⁷⁸ Or perhaps the easiest way for smelters and refiners to become conflict free is to process minerals solely from other areas. These companies might, therefore, abandon the region to respond to demand for certified facilities. Thus, if the proposal is successful, the *de facto* embargo concern rises anew.

The worry that the regulations would hurt those who it is aimed to help is no doubt troubling, but once put in the proper context, it is far less fearsome than it first appears. Properly viewed, the potential injury to individual and family miners is a potential cost of the rules. As such, it should be weighed against its benefits. The real question is whether the marginal loss to these miners, who must seek other employment, is larger than the gains in cutting off the funding to warring Congolese groups.²⁷⁹ This question is unanswerable in the abstract, but the filings would provide a market-based mechanism for doing so.

The filings would show which companies are using conflict-free processing facilities that source from the region and which are using conflict-free processing facilities that source from elsewhere (with the benefit of multiple years of disclosures, readers would even be able to see if smelters and refiners become conflict-free by fleeing the Congo). Socially motivated shareholders and consumers would care not only about the conflict-free status, but also about how the status is achieved, and reward or punish companies accordingly. These individuals would likely not be inclined to reward companies that use smelters and

²⁷⁷ See *supra* text accompanying notes 246–253.

²⁷⁸ Some commentators have suggested this may be the case, but have stopped short of presenting evidence. See, e.g., MATTHYSEN & ANDRÉS ZARAGOZA MONTEJANO, *supra* note 251, at 9 (claiming that “most smelters decided to stop sourcing from the DRC to enable them to acquire ‘conflict-free smelter’ status.”); Aronson, *supra* note 4 (asserting that “the smelting companies that used to buy from eastern Congo have stopped”). One commentator discusses the departure of the Malaysian Smelting Corporation from the region; but it looks like the company has recently reversed course. Compare Seay, *supra* note 85, at 15, with *MSC to Invest in DR Congo Smelter*, INDUS. TECH. RESEARCH INST. (June 6, 2012), https://www.itri.co.uk/index.php?option=com_zoo&task=item&item_id=2455&Itemid=143. Moreover, nothing in the filings suggests this is occurring.

²⁷⁹ The loss to the miners is a subject of debate. Compare BAFILEMBA ET AL., *supra* note 242, at 3, with Seay, *supra* note 85, at 14.

refiners that have taken the easy way out and thus there would be no incentive for the processing facilities to do so. If, however, companies did see some gains with these concerned constituents even when they choose smelters or refiners that left the region, then it would indicate that those most concerned about these issues believe that firms that use processing facilities that exited the Congo are still better actors than those that continue to use uncertified smelters and refiners. The logic of naming and shaming relies on the decisions of these individuals. Who better to make the cost-benefit calculation regarding the overall social impact of leaving the region?²⁸⁰

Finally, after only a few years it would become apparent from the filings whether smelters are fleeing. Since this would be the result of socially driven market forces, however, it would not mean that the rules should be changed. The appropriate response would be for human-rights groups to build assistance and jobs programs for displaced miners—and, at this point, they would have data to support their pleas for funding. In the end, as with all attempts to regulate, there are risks—of failure, industry capture, and unintended consequences—that accompany this proposal. But none of them stain its potential efficacy.

D. Implications for other Supply Chain Transparency Efforts

While this Article has focused on assessing and improving the U.S. conflict-minerals rules, the analysis and proposals carry implications for U.S. states and other countries currently considering similar actions, both with respect to conflict minerals and with respect to other unethical sourcing practices.²⁸¹ As it pertains to conflict minerals, rather than copy current U.S. federal law, concerned governments should, as in the above template, seek transparency on smelters and refiners in corporate supply chains and leverage institutional efforts to certify them as conflict free. They should also provide ample opportunity for companies to explain knowledge gaps or practices that raise concerns.

More broadly, rules designed to name-and-shame companies into more socially responsible sourcing practices need to have teeth and they need to be tailored to closely reflect how the relevant supply chains work and what companies can be expected to know about them. Regulated entities will not do the work of the regulators. Rather, they should be viewed as uncooperative witnesses. Lawmakers must ask pointed and relevant questions or else they will come back empty-handed. Companies must also fear reprisal. Therefore, in contrast to what happened with Section 1502, the task of regulation and enforcement should be

²⁸⁰ While individual shareholders and consumers could inform themselves through these filings, it is more likely that human-rights groups and other concerned intermediaries would distill the information and make recommendations that drive their decisions. This market dynamic cannot function today because the disclosures offer so little to go on. Cf. Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984) (discussing the role of intermediaries in efficient stock markets).

²⁸¹ See *supra* text accompanying notes 95–97.

assigned to a body that empathizes with the social goals instead of one that begrudgingly takes on the duties.

CONCLUSION

So far, the debate about the conflict-minerals rules has offered more polemics than insight. A review of the filings themselves, however, provides an abundance of data about the efficacy of the rules and how they could be improved. Section 1502 and the SEC rules that bring it to life fail in their principal goal of naming and shaming companies that source minerals from militarized mines in the Congo. While this failure supports the legislation's repeal, I argue that a close read of the filings points to a better alternative.

Rather than give up on the worthwhile goal of fighting human-rights abuses in the Congo, the rules can be reformed so as to demand the transparency that failed to materialize in the first-year reports. To do this, the central requirement should be that corporations disclose the identity and conflict status of the facilities that process their conflict minerals. These pieces of information are largely obtainable and illuminate corporate supply chains more than a thousand other details. While supply chains would not become conflict free overnight, such revelations would provide concerned shareholders and consumers with the information necessary to apply the type of pressure that leads to change.

**COMMITTEE ON FINANCIAL SERVICES
MONETARY POLICY AND TRADE SUBCOMMITTEE**

**HEARING ON "DODD-FRANK FIVE YEARS LATER: WHAT HAVE WE
LEARNED FROM CONFLICT MINERALS REPORTING?"**

**TESTIMONY OF KAREN E. WOODY
ASSISTANT PROFESSOR OF BUSINESS LAW AND ETHICS
KELLEY SCHOOL OF BUSINESS, INDIANA UNIVERSITY**

NOVEMBER 17, 2015

Chairman Huizenga, Ranking Member Moore and members of the Subcommittee, thank you for the invitation to appear before you today. My name is Karen Woody. I am an Assistant Professor of Business Law and Ethics at the Kelley School of Business at Indiana University. I have researched and written about the mandate and role of the Securities and Exchange Commission, particularly in enforcing Section 1502 of Dodd-Frank.¹ I also teach classes on corporate and securities law. I am honored to appear before you today, along with this panel of distinguished experts.

My remarks are focused on the SEC's role in implementing and enforcing Section 1502. In particular, I will address the suitability of the SEC as the agency tasked with promoting humanitarian policy objectives, and the implications of extending disclosure mandates similar to the conflict minerals disclosure requirement.

Background

The Securities and Exchange Commission was founded in 1934 and bestowed by Congress with a three-pronged mission: (1) protecting investors; (2) maintaining fair, orderly, and efficient markets; and (3) facilitating capital formation. The focus of the mandate is the creation and preservation of market integrity. In other words, the SEC was created to help assure investors that their investments are safe. Markedly absent from this congressional mandate is any administrative authority or charge to effect international, diplomatic, or human rights-oriented goals.

The mandate is met, in theory and practice, by the establishment of a rigorous disclosure regime. Disclosure regulations assist with the accurate valuation of securities, boost investor confidence, and incentivize corporate managers to behave diligently. The SEC mandate -- market transparency, fairness, and investor protection -- is achieved through this dissemination of material information to investors.

¹ *Conflict Minerals Legislation: The SEC's New Role as Humanitarian and Diplomatic Watchdog*, 81 Fordham L. Rev. 101 (2012); *Securities Laws as Foreign Policy*, 15 Nev. L. J. 297 (2014).

As the SEC states on its own website: “The laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it.”²

Companies are required to make certain statutorily-mandated disclosures, triggered by events such as issuing new securities or electing new management. In addition to these disclosures, publicly traded companies must disclose any information considered *material*. Neither Congress, the SEC, nor the Supreme Court defined “material information” until 1976, when the Court held that a material fact is one that “would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.”³ This was generally understood to mean information that significantly affected a company’s financial performance and consequently translated into stock market gains or losses.

The SEC, through its regulations, also has implicitly defined material information as information that bears on the *economic* value of an investment. The SEC’s understanding of the materiality standard is that a reasonable investor “generally focuses on matters that have affected, or will affect, a company’s *profitability and financial* outlook.”⁴

SEC’s Inability to Regulate or Measure Humanitarian and Diplomatic Goals

Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act is not a financial regulation, but rather a provision aimed at ending the atrocities of a war occurring seven thousand miles from Wall Street. Indeed, the SEC’s proposed rule stated exactly that point:

It appears that the nature and purpose of the Conflict Minerals Provision is for the disclosure of certain information to help end the emergency humanitarian situation in the eastern DRC that is financed by the exploitation and trade of conflict minerals originating in the DRC countries, *which is qualitatively different from the nature and purpose of the disclosure of information that has been required under the periodic reporting provisions of the Exchange Act.*⁵

Assigning the SEC with oversight of conflict minerals disclosure is well beyond the SEC mandate and overextends the agency in ways that could prove harmful to its sole mission: investor and market protection, and capital formation.

² *The Investor’s Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, SEC, <http://www.sec.gov/about/whatwedo.shtml> (last visited Nov. 12, 2015)

³ *TSC Industries v. Northway, Inc.*, 426 U.S. 438 (1976).

⁴ Memorandum from David B.H. Martin, Dir., Div. of Corp. Fin., U.S. Sec. & Exch. Comm’n, to Laura Unger, Acting Chair, U.S. Sec. & Exch. Comm’n (May 8, 2001) (emphasis added).

⁵ Conflict Minerals Proposed Rule, 75 Fed. Reg. 80,948, 80,960 (proposed Dec. 23, 2010) (codified at 17 C.F.R. pts. 229, 249b) (emphasis added).

When tasking an agency to work towards a goal outside of its mandate and outside of its expertise, the agency and the population it is designed to protect are losing out in two ways: (1) by losing the opportunity that the proper agency (i.e., one with the particular expertise and resources) and its experts would achieve the goal in a more efficient and more successful manner; and (2) by reducing the ability of the mis-tasked agency to do its best with the proper tasks it should be accomplishing. In other words, by tasking the SEC with regulation such as that of conflict minerals, one is foregoing the opportunity that another agency, such as the Department of State, can design a better solution to achieve the humanitarian goals of the provision. Moreover, there is an increased risk that the SEC will not have sufficient resources to accomplish the goals for which it was created; in practicality, this means that the risk of another Enron or Madoff scandal increases because the agency is overextended.

Even if the SEC had the resources and expertise to handle enforcement of Section 1502, the structure of the legislation is one that makes regulation ineffective. For instance, what is the consequence for a company that uses conflict minerals, and then complies with Section 1502 and discloses this fact? In such a situation, the SEC plays no role because the company has complied with regulatory standards. Ostensibly, a company can file a conflict minerals report with the SEC, publish the report on its website, and cross its fingers hoping that there is no public backlash that affects its bottom line or its brand. From a public international law standpoint, it would seem that the possibility of a remorseless, albeit SEC-compliant, company reduces the legislation to a toothless tiger.

Based on citizen outcry related to conflict minerals, however, it is very possible that the “name and shame” aspect of the legislation could prove to be effective in creating transparent supply chains. This would be a positive result, but one that does not reach the stated goal of the legislation. The stated goal of Section 1502 is reduction of violence in Congo. Unfortunately, the SEC is not capable of measuring or quantifying that goal, or assessing its progress towards that goal. The result of this is that the goal of the law is unrealized, while the SEC and issuing companies expend vast resources in an attempt to meet this inherently elusive goal.

Effect of Increasing Disclosure Requirements for Nonmaterial Information

Section 1502 added a provision to Section 13 of the Exchange Act of 1934. Section 13 of the Exchange Act includes the list of mandatory disclosures that issuing companies must make. Amending the securities laws, in this case Section 13 of the Exchange Act, to include the conflict minerals disclosure requirement is not in keeping with the traditional understanding or function of disclosure requirements. As I mentioned earlier, companies are required to disclose all material information. The ultimate question, therefore, is whether the use of conflict minerals is material information. In practicality, this question is moot because disclosure is now statutorily required, rather than being analyzed in principle. Meaning, the threat of noncompliance with the statute puts a company on the hook for disclosing information regarding conflict minerals, regardless of whether that information is actually material.

However, it is worth considering the implications of requiring disclosure of arguably nonmaterial information. Statutorily requiring disclosure, rather than trusting companies to perform a qualitative assessment of materiality of corporate information, can result in an overload of information for investors. In such a situation, an overabundance of information is functionally the equivalent of providing no information, because vast swaths of information cannot practically be processed by investors. Further, there is an increased risk that the principle-based analysis of materiality gets dismissed in favor of disclosure regime more akin to a Napoleonic code, in which companies merely will check the box for each statutorily-required disclosure.

Absent the statutory requirement in Section 1502, information about conflict minerals likely would not meet the threshold for materiality. Conflict minerals disclosure is not a financial disclosure. Disclosure of social and environmental information is typically not required because that information, to date, has not been regarded as relevant or material to the financial condition of a company. As I noted earlier, the SEC regulations, while not explicitly adopting an economic standard for materiality, implicitly define material information as that which bears on the *economic* value of an investment.

For example, consider the scenario in which a company files a conflict minerals report with a clear misstatement of fact, and is sued by a shareholder for that misstatement. The materiality question that would be paramount to the analysis of such a case is whether the shareholder could prove loss, or loss causation. Loss is typically proven by evaluating the change in stock price when the issuer makes various announcements, such as the corrective disclosure. In the case of conflict minerals, it seems unlikely that such a disclosure would drastically move a company's share price. As a result, a shareholder would not be able to prove that the misstatement of information was material enough to create any financial or economic loss.

Proponents of Section 1502 and other measures enhancing disclosure requirements point out that the general public's increased awareness of conflict minerals has rendered it material information. The general public, however, is not the constituency of the SEC; investors are. That is, the SEC was created to protect those who own Apple stock, not everyone who owns an iPhone. If the SEC administered its regulations with an eye toward protecting *all* citizens, rather than only shareholders, it would be difficult to maintain capital formation and to balance the requirements of the agency's mandate. For this reason, the SEC has never waded very far into regulation of human rights or foreign policy. Furthermore, requiring the SEC to enforce these disclosure requirements stretches thin an already overburdened agency, and demands that it oversee diplomatic and humanitarian regulations for which it lacks the subject matter expertise and enforcement resources.

Thank you again for the invitation to testify today. I welcome any questions you may have.



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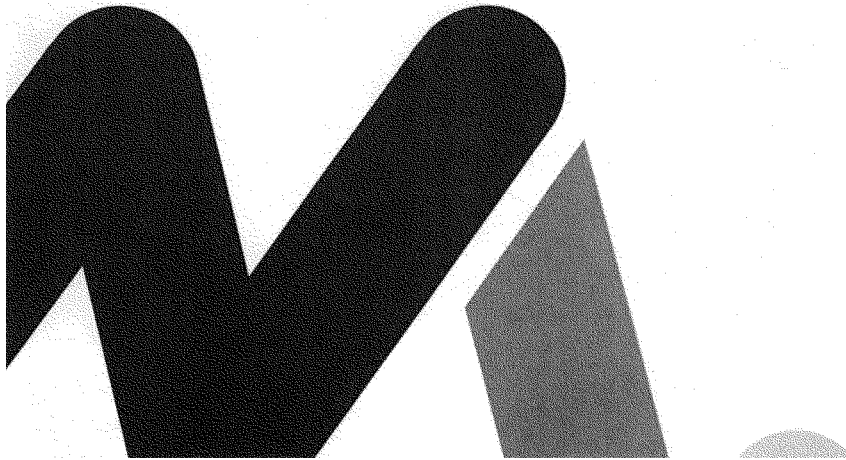
Statement for the Record

of Linda Menghetti Dempsey
Vice President, International Economic Affairs
National Association of Manufacturers

*For the Hearing of the House Committee on Financial Services
Subcommittee on Monetary Policy and Trade*

*on "Dodd-Frank Five Years Later:
What Have We Learned from Conflict Minerals Reporting"*

November 17, 2015



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The National Association of Manufacturers (NAM) is the largest and oldest industrial trade association in the United States, representing small and large manufacturers in every industrial sector and in all 50 states. Its membership includes both large multinational corporations with operations in many foreign countries and small and medium manufacturers engaged in international trade on a more limited scale. Our members depend heavily on the global supply chain to compete within the U.S. marketplace and abroad. NAM members have a strong track-record of working with the U.S. government to improve supply chain transparency and compliance practices.

The overly burdensome, and challenging requirements of Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") have had a negative impact on U.S. manufacturers operating globally.

The Dodd-Frank Act was enacted by Congress and signed into law by President Obama in 2010. Section 1502 of the Act requires that companies publicly traded in the United States annually report to the SEC any use of conflict minerals in their supply chains. It defines "conflict minerals" as "columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives" (which are commonly referred to as tantalum, tin, gold and tungsten, respectively, or 3TG), and it directs companies to disclose whether those minerals originated in the Democratic Republic of the Congo (DRC) and its adjoining nations – Angola, Zambia, Tanzania, Rwanda, Burundi, Uganda, South Sudan, Central African Republic, Republic of the Congo and Cameroon. In August 2012, the SEC promulgated rules outlining how publicly traded companies should comply with the Dodd-Frank Act.

While the NAM supports the underlying objective of Section 1502 of the Dodd-Frank Act to address the atrocities occurring in the DRC, the NAM and our member companies of all sizes and across all industry sectors have deep and serious concerns that Section 1502 of the Act has created a hugely burdensome, unworkable, and unfeasible system with which industry must comply.

In particular, the disclosure requirements laid out by the SEC:

- Pose a huge financial, reporting, and auditing burden on reporting manufacturers, given the breadth of use of the 3TG minerals throughout the manufacturing process and the depth, complexity, and constantly evolving nature of modern supply chains. Many companies have thousands of multi-tier suppliers for their products. Tulane University's business school has issued a series of studies on Section 1502 of the Dodd-Frank Act, which have found that it would cost industry almost \$8 billion to implement, and that publicly traded companies "worked a combined 6,139,983 hours" on the first annual filing alone.¹
- Affect thousands of small- and medium-sized companies not subject to SEC reporting because they supply large, publicly traded companies and are asked by those issuers to conduct the due diligence required by the rule. Downstream users are forced to rely almost entirely on the due diligence of their suppliers throughout the supply chain, even when they have limited or no influence on those smaller firms. Moreover, years of experience have made clear that smelters and refiners are almost invariably unable or unwilling to disclose the mines of origin of the ores they purchase, despite very extensive efforts from downstream industry to elicit such disclosure. As a result, the disclosure mandated by Section 1502 of the Dodd-Frank Act has failed to obtain the desired results. The most recent study conducted by the United States Government Accountability Office (GAO) of the first year by U.S. publicly traded companies, found that "[m]ost [filers] were unable to determine whether [their] minerals came from [the Democratic Republic of the Congo], and none could determine whether the minerals financed or benefited armed groups..."²
- Are not consistent with the realities of global supply chains, and fail to acknowledge the practical limitations that issuers face in attempting to gather information, let alone influence the behavior of other parties in supply chains that stretch from downstream users across multiple tiers. Moreover, NAM member companies' supply chains, like those of other businesses, are not static but dynamic, as companies continuously seek new suppliers with better products or more competitive prices or delivery terms to deliver value for their customers.
- Are questioned by the very officials at the SEC charged with implementing them. In an Oct. 3, 2013 lecture at Fordham University, Chair Mary Jo White made the following statement regarding the conflict minerals rules:

"...other mandates, which invoke the Commission's mandatory disclosure powers, seem more directed at exerting societal pressure on companies to change behavior, rather than to disclose financial information that primarily informs investment decisions... As the Chair of the SEC, I must question, as a policy matter, using the federal securities

¹ "A Critical Analysis of the SEC and NAM Economic Impact Models and the Proposal of a 3rd Model in view of the Implementation of Section 1502 of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act." **Tulane University** (Oct. 17, 2011). "Dodd-Frank Section 1502: Post-Filing Survey 2014," **Tulane University** (2014).

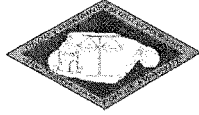
² "SEC Conflict Minerals Rule: Initial Disclosures Indicate Most Companies Were Unable To Determine the Source of Their Conflict Minerals." **Government Accountability Office** (August 2015).

laws and the SEC's powers of mandatory disclosure to accomplish these goals."³

Conclusion

On behalf of our 14,000 member companies, the NAM cannot overstate the detrimental impact that Dodd-Frank Act has had on the competitiveness of manufacturers in the United States.

³ Remarks by SEC Chair Mary Jo White at Fordham University on "The Importance of Independence," (Oct. 3, 2013).



ASSODIP
ASSOCIATION FOR THE DEVELOPMENT OF THE INITIATIVES OF THE PEOPLE
Congolese Human Rights NGO'

Goma, 15 November 2015

Object : Public declaration to the House Financial Services Subcommittee on Monetary Policy and Trade – on the subject of Section 1502 and supply chain due diligence

Dear Chairman Huizenga, Ranking Member Moore and Members of the Subcommittee:

With this declaration I would like to congratulate the American people for the interest that they have shown towards the Congolese people, of whom the human rights have been violated over a period of many years. These violations have a direct link with the control and exploitation of natural resources by local and foreign armed groups as well as certain members of the Congolese army.

Section 1502 of the Dodd Frank Act is aimed at reducing or, better, stopping these multiple violations of Congolese human rights that are engendered by the natural riches bequeathed to them by their ancestors. In this respect, I call on the Securities and Exchange Commission to do everything to ensure that this law is implemented by American companies who use minerals from the Democratic Republic of Congo and the Great Lakes region. It would also be worth reflecting on the monitoring mechanisms that exist in the upstream part of the supply chain at this point. This is with an eye to seeking proper reassurance that supply chain due diligence norms are being respected. In my opinion, closer attention here would be useful and would be for the good of the Congolese communities who have, for a longtime now, suffered from the conflict linked to their minerals and for whom the term 'development' remains an empty word.

For ASSODIP asbl
MURAIRI BAKIHANAYE Janvier

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November 17, 2015

“Dodd-Frank Five Years Later: What Have We Learned from Conflict Minerals Reporting?”
Financial Services Subcommittee on Monetary Policy and Trade

**Conflict-Free Campus Initiative Statement
Submitted for Congressional Record**

Dear Chairman Huizenga, Vice Chairman Mulvaney, Ranking Member Moore, and Members of the Subcommittee:

We are writing to express our support for Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the corresponding Conflict Minerals Rule promulgated by the Securities and Exchange Commission. As student leaders with the Conflict-Free Campus Initiative – a joint initiative led by the Enough Project’s Raise Hope for Congo campaign and STAND, the student-led movement to end mass atrocities – this legislation is a crucial component to our mission to support peace in the Democratic Republic of Congo.

We work with university administrators, student governments, and our local communities to enact measures that pressure electronics companies and other relevant industries to help end the conflict minerals trade and responsibly invest in Congo’s minerals sector. So far, 19 universities, colleges, and high schools have passed resolutions to this effect, and students from more than 175 schools across the United States, Canada, and the United Kingdom have participated in the campaign. Our goal is to bring attention to the consumer link between conflict minerals and the financing of armed groups in Congo, while also advocating for additional reforms that will benefit Congolese communities.

The reports companies are required to submit under Dodd-Frank 1502 and the corresponding Conflict Minerals Rule provide a critical resource for our school administrations to assess which companies are working towards the goal of sourcing conflict-free minerals from Congo and, therefore, help institutions make purchasing decisions. Additionally, as concerned consumers ourselves, we value the transparency provided by these reports that allows us to be better informed buyers.

Conflict minerals are not the only source of funding to armed groups in Congo, but they are some of the most lucrative. The connection between conflict minerals in Congo and products such as cell phones, laptops, and jewelry means that we as have the opportunity to leverage our consumer power to ensure our purchases fund sustainable peace in Congo, not conflict. In order for this process to unfold, Dodd-Frank 1502 and the corresponding Conflict Minerals Rule must be fully implemented, not abandoned, and strengthened with livelihood projects and additional support to mining communities in Congo.



We urge the members of the Subcommittee to reaffirm the intentions of Dodd-Frank 1502 to improve the transparency of corporate supply chains, and reduce the profits gained by armed actors in Congo from the minerals trade.

Thank you for your time, your leadership, and your consideration of this important initiative.

Sincerely,

Ellen Bresnick
Middleton High School
Middleton, WI

Francesca Freeman
University of Chicago
Chicago, IL

Larissa Peltola
Claremont McKenna College
Claremont, CA

Danny Cheng
University of Central Florida
Orlando, FL

Samantha Ivaturi
Purdue University
Purdue, IN

Jake Ramirez
University of Arizona
Tucson, AZ

Emily Collinson
American University
Washington, DC

Jacqui Johns
Georgetown College
Georgetown, KY

Marissa Sandrgen
Lewis & Clark College
Portland, OR

Sarah Cox
Antioch University New England
Keene, NH

Madi McEwen
SUNY Buffalo
Buffalo, NY

Amit Sen
University of Arizona
Tucson, AZ

Jane Dimnwaobi
Boston University
Boston, MA

Allie McNamara
Illinois College
Jacksonville, IL

Ceci Steyn
McGill University
Montreal, Canada

Jenna Dresner
University of Southern California
Los Angeles, CA

Stephanie Nicoson
St. Norbert College
De Pere, WI

Bethany Vance
University of North Carolina at Chapel Hill
Chapel Hill, NC

Ntekereze Enock
Rochester Institute of Technology
Henrietta, NY

Dylan Okabe-Jawdat
Columbia University
New York, NY

Savannah Wooten
University of North Carolina at Chapel Hill
Chapel Hill, NC

Kayla Finstein
Southern Methodist University
Dallas, TX

Zachary Peloquin
Clark University
Worcester, MA



Hearing on Dodd-Frank's Conflict Minerals Provision

Written submission of the Electronic Industry Citizenship Coalition (EICC)

Before the SUBCOMMITTEE ON MONETARY POLICY AND TRADE OF THE COMMITTEE ON FINANCIAL SERVICES U.S. HOUSE OF REPRESENTATIVES

Thank you for the opportunity to provide written testimony to your subcommittee today. The EICC is a nonprofit coalition of electronics companies dedicated to the social, environmental and ethical responsibility of their global supply chains. The EICC is comprised of more than 100 electronics companies with combined annual revenue of approximately \$3 trillion, and directly employing over 5.5 million people. EICC works across a range of issues areas by providing tools, processes and programs to combat trafficked and forced labor, improve health and safety, raise environmental sustainability, and other issues related to workers and their communities affected by electronic sector supply chains worldwide.

The use of tantalum, tin, tungsten and gold (3TG) in electronics has led the global electronics industry to take a leadership role in responding to armed groups involved in the severe humanitarian crisis in the DRC that is partially funded from the extraction and sale of conflict minerals. This is why in 2008, with support from the Global e-Sustainability Initiative, we founded the Conflict-Free Sourcing Initiative, or CFSI, a program that helps companies make informed decisions about the sourcing of minerals in their supply chains. This program was founded before Dodd-Frank Section 1502 was enacted, and has grown into a respected resource for companies addressing conflict minerals issues in their supply chains.

While CFSI's membership began in the electronics industry, it has since broadened to include other industry sectors as the economy-wide impact of conflict-minerals became evident. Today CFSI membership consists of nearly 300 companies and associations from electronics, aerospace, apparel, automotive, equipment, general manufacturing, jewelry, medical, retail, and extractives industry sectors whose products are sold in every country in the world. CFSI's staff and audit program is funded by membership contributions of approximately \$650,000 per year plus in-kind support from CFSI of approximately \$200,000. We receive no income from smelter audits, which are billed at actual cost.

In 2014, the SEC received 1,300 reports from issuers, and CFSI had around 200 members. In 2015, the SEC received 1,267 reports from issuers and we had around 270 member companies.

CFSI's core values and activities inform the common tools and resources we provide to improve companies' abilities to source responsibly. At the core of our program are smelters and refiners¹, who are recognized as the critical pinch point in the 3TG supply chain. It is the smelters who decide where to source their minerals from, and given the relatively small number of companies in the world that process ore, this information is highly confidential. Smelters that desire to be validated as "conflict-free" may participate in the Conflict Free Smelter Program (CFSP). The CFSP uses an audit standard and procedure

¹ For ease of reference, we will refer hereafter only to smelters, though our program encompasses both smelters and refiners.



and third-party auditing system to assess smelters' material procurement activities, sourcing policies, and management systems to determine if the smelters can demonstrate that the minerals they process originate from conflict-free sources. All smelters that are confirmed compliant to the protocol are posted to the CFSI web site.

CFSI operates within both the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and Dodd-Frank Act frameworks to help companies meet legal requirements in the United States and the expectations of the global community. Under Dodd-Frank, US-listed companies that use 3TG in their manufactured products must undertake a Reasonable Country of Origin (RCOI) Inquiry to determine whether the 3TG was mined in the DRC or one of the surrounding countries (the "Covered Countries"). CFSI collects (RCOI) data from our smelter audit program, and provides these data to our members.

The OECD Guidance recommends that downstream companies attempt to identify and review the due diligence process of the smelters in their supply chains, and assess whether the smelters adhere to due diligence measures aimed at supporting the procurement of conflict-free 3TG. In accordance with the OECD Guidance, downstream companies may participate in industry-wide schemes that assess smelters' compliance, such as the CFSI, and may draw on the information these schemes provide to help them implement the OECD recommendations.

So what are the results to date? The total number of identified 3TG smelters is roughly 320. The first smelter was validated as CFSP compliant in 2010. Today, we are proud to say that 205 smelters from over 40 countries have joined the program, and are validated as having the systems and processes in place to support sourcing of conflict-free 3TG. An additional 42 smelters are in the process to become audited. Taken as a whole, 77% of identified smelters for all four metals are participating in the CFSP today. In terms of global metal supply processed by CFSP-compliant smelters: a rough estimate for tin is around 75-85% of global production while tantalum coverage is likely >95%. We continue to work on estimates for gold and tungsten. We have a 100% retention rate for smelters in the program so far. The smelters in our program have demonstrated the highest level of responsible sourcing management systems in the industry. The value of this accomplishment to downstream companies cannot be overestimated.

Our work is far from finished, however. The number of 3TG smelters is likely to grow. Smelters continue to be identified as we learn more about the 3TG industry and as new links in the supply chain are discovered.

The CFSI strongly believes that conflict-free does not mean Congo-free. Our system supports on-going market access for the legitimate mineral trade in the DRC. Among the CFSP-compliant smelters, 22 source from the Covered Countries, and of those, 14 source from the DRC. The CFSI does not encourage or condone company policies that ban purchases from the Covered Countries. We continue to receive requests for information from smelters that are interested in sourcing in-region but want to do so responsibly. Unquestionably, companies have shown that they can source 3TG without funding armed groups in the DRC and still source from the region.

The Conflict-Free Sourcing Initiative
www.conflictreesourcing.org | @EICCcoalition | @GeSIConnect



The CFSI facilitates this process through our partnership with in-region traceability and due diligence programs that connect smelters to legitimate sources of 3TG. These include the Better Sourcing Program, ITRI Tin Supply Chain Initiative, Public-Private Alliance, and Solutions for Hope, and the International Conference on the Great Lakes Region (ICGLR) Regional Certification Mechanism. In-region programs provide key documentation, oversight, and assurances of mineral traceability and risk assessment to smelters to help them undertake supply-chain due diligence. These programs also help smelters meet the CFSP's traceability and chain of custody standards. Without this or similar infrastructures in place, both smelters and downstream companies would be severely limited in their ability to identify and respond to risks in their supply chains and to support a legitimate trade in minerals that benefits all actors involved.

The CFSI supports harmonized, efficient, and supportive mechanisms for assessing the mineral supply chain (mine to smelter). Accordingly, for gold, we serve as a complement to the London Bullion Market Association and Responsible Jewelry Council certification programs and cross-recognize the refiners that participate in those programs. We are currently evaluating the potential for further cross-recognition with emerging programs in China and the EU as well. This is a critical part of global efforts to ensure a responsible minerals trade while minimizing the private sector's burden.

We provide other tools and resources for companies beyond direct smelter auditing. For example, we created the Conflict Minerals Reporting Template, abbreviated as CMRT, which is the emerging accepted standard for downstream companies to share data relative to the list potential smelters that are in their supply chain. Companies can also use the CFSI to share and learn about best practices around due diligence and risk assessment, regulatory compliance, OECD conformance, and how smelters and members can better adopt the values of responsible sourcing.

Measuring the effectiveness of Dodd-Frank in reducing conflict on the ground is not our role. Dodd Frank has created focus and attention to this important issue and it has galvanized about 25% of the issuers to contribute collaboratively within the CFSI to enable responsible sourcing.

CFSI member companies have demonstrated they are willing to do their part to enable responsible sourcing of minerals. However, companies cannot effectively address all causes and contributors in conflict-affected areas such as lack of governance and security, corruption, and rule of law. Conflict-free supply chains require the efforts all stakeholders: governments, private companies, industry associations, and non-governmental entities. NGOs, governments, and the international community broadly should continue efforts to build governance, security and stability in the DRC and elsewhere.



November 16, 2015

**House Financial Services Subcommittee on International Monetary Policy and
Trade
Statement of Claigan Environmental Inc.**

Dear Chairman Huizenga, Ranking Member Moore and Members of the Subcommittee:

Claigan Environmental wishes to correct a number of fallacies and misconceptions concerning the effectiveness and costs of compliance to Section 1502 of Dodd-Frank.

Claigan is an industry expert on practice compliance to Section 1502 of Dodd-Frank. Claigan has previously testified to the Subcommittee on International Monetary Policy and Trade and Claigan's original work on conflict minerals is featured extensively in the SEC Final Rule on Section 1502 of Dodd-Frank. Claigan's original cost projections included in the SEC Final Rule have proven to be the most accurate of all of the cost estimates submitted to the SEC during the formulation of the Final Rule on Section 1502 of Dodd-Frank.

Claigan Environmental is the only service provider to be audited against the OECD Due Diligence Guidance¹. Statements here regarding attainability of DRC Conflict-Free status are consistent with due diligence processes that have been independently audited.

The key fallacies / misconceptions we wish to expose are –

#1 - *It is impossible to trace the country of origin of the smelters in my supply chain.*

#2 - *It is not possible to be conflict free.*

#3 - *The compliance cost is very high*

Fallacy #1

It is impossible to trace the country of origin of the smelters in my supply chain.

There are many publicly available sources that provide data on the country of origin of many smelters.

Electronics Industry Sources

a) The Conflict Free Sourcing Initiative² provides a complete list of all smelters that have been audited by a 3rd party according to the OECD Due Diligence Guidance (i.e. they are

¹ Independent Auditor's Opinion. Claigan Environmental Inc. Step 2 of OECD Guidance.
<http://www.claigan.com/auditreport.pdf>

² The Conflict Free Sourcing Initiative
<http://www.conflictreesourcing.org/conflict-free-smelter-refiner-lists/>



conflict free). Every smelter on this list has a conflict minerals policy, some of which indicate the sourcing of their minerals. For example, the tin smelter PT ATD Makmur Mandiri Jaya is conflict free³ and has a link to their conflict minerals policy⁴, which clearly states they only smelt, refine, and process tin from Indonesia.

Mining Industry Sources

b) iTSCI, the on the ground certification network of mines in the Covered Countries, provides an up-to-date list of its members, which includes several smelters that source from the Covered Countries.⁵ For example, the tantalum smelter Jiujiang Jinxin Nonferrous Metals Co., Ltd. is an iTSCI member and their profile states they source from the Great Lakes Region.

Smelter Industry Associations

c) The Tungsten Industry – Conflict Minerals Council is an association of tungsten smelters and other related tungsten industry members.⁶ The corporate members have profiles that often provide country of origin data. For example, the profile of Hunan Chuangda Vanadium Tungsten Co., Ltd., which operates 2 different tungsten smelters, states that all of the ores and concentrates they process come from three mines in China, Shi Zhuyuan, Xin Tianling, and Yao Gangxian.⁷

Direct Data from Smelters

d) Many smelters provide country of origin data directly on their website. For example, the gold smelter Caridad, which is operated by the Grupo Mexico Mining Division and its subsidiary AMC, provides a list of all countries from which it sources minerals.⁸ This smelter only sources from Mexico, Peru, USA, Chile, Ecuador, and Argentina.

Google and Internet Sources

e) General Internet searches including a smelter's name and the name of a covered country can also lead to country of origin data. For example, the first hit from an Internet search of the tungsten smelter Wolfram Bergbau und Hütten AG and the country Rwanda links this smelter to the country.⁹

The above list provides only some examples of how SEC issuers can acquire country of origin data for the smelters in their supply chain. The best way to acquire this data is to contact the smelters directly, as specified in the OECD Due Diligence Guidance (Step 2C).

³ The Conflict Free Sourcing Initiative – Conflict Free Tin Smelters

<http://www.conflictreesourcing.org/conflict-free-smelter-program/smelter-refiner-lists/tin-testing/>

⁴ PT ATD Makmur Mandiri Jaya – Products

<http://atdmmj.com/wp/products/>

⁵ iTSCI Full Members

https://www.itri.co.uk/index.php?option=com_mtree&task=viewlink&link_id=52326

⁶ Tungsten Industry – Conflict Minerals Council

<http://www.ti-cmc.org/>

⁷ Tungsten Industry – Conflict Minerals Council, Hunan Chuangda Vanadium Tungsten Co., Ltd.

http://www.ti-cmc.org/member_profile.asp?ID=33

⁸ Grupo Mexico Mining

<http://gmexico.com.mx/en/mining>

⁹ Wolfram Mining and Processing

<http://www.wmprwanda.com/>



Refer to Annex I for an in-depth example of an issuer stating that they could not determine whether or not their supply chain sources from the DRC or adjoining countries, and how a simple Google search shows that the issuer obviously made no effort to determine whether or not they source from the region.

Fallacy #2

It is not possible to be conflict free.

The SEC Final Rule clearly states that the country of origin inquiry is not absolute and only needs to be reasonable and performed in good faith. The independent private sector audit (IPSA) is not based on the results of a conflict minerals program; it is based on the design and execution of the conflict minerals program. As long as an issuer designs their conflict minerals program to conform to the OECD Due Diligence Guidance and they follow that guidance (while documenting the processes), they will be able to pass an IPSA and be conflict free (*n.b.* the IPSA is only mandatory if an issuer claims some or all of their products are DRC Conflict-Free).

There are two major deterrents to companies going through with declaring themselves conflict free (1) the lack of enforcement and (2) the cost of the audit. Since there are currently no negative repercussions for a company not to declare themselves conflict free, many companies are electing to save the additional expenses of an audit. Similarly, since the SEC to date has not provided comment/castigated any SEC issuers for their lack of effort, many companies are attempting to get away with the "bare minimum". This has created a culture of doing the bare minimum amongst many SEC issuers regarding conflict minerals. Since the conflict free designation and the accompanying audit are not requirements, they currently fall well outside of doing the bare minimum.

The other major deterrent for companies declaring themselves DRC conflict free is the potential cost of the audit. Claigan has contacted roughly a dozen different auditors. The difference in cost between these different auditors is staggering. On the lower end, auditors are quoting \$20,000-\$25,000. On the higher end, auditors are quoting over \$100,000. Perhaps most troubling is that the auditors on the lower end are much more adept at articulating which specific parts of an issuer's conflict minerals program falls under the scope of the audit and which do not. The audit is meant to assess two requirements: (1) does the design of the issuer's conflict minerals program adhere to the OECD Due Diligence Guidance, and (2) did the issuer execute their program according to the design of their program. Auditors on the higher end are more likely to increase the scope beyond these specific requirements, thereby greatly increasing the overall cost of the audit.

Despite the recent Court of Appeals ruling, the audit is still necessary for any company that wishes to claim itself as DRC Conflict-Free. It is certainly possible for issuers to be DRC Conflict-Free, but the lack of enforcement and the cost of the audit are making it much easier for them to follow the course of resistance rather than action.



Fallacy #3

The compliance cost is very high

The compliance cost has been far lower than we originally projected in 2011. The cost of compliance for issuers to the SEC has been closer to \$105 million. This is significantly lower than the \$815 million we projected in 2011 and far lower than the costs projected by Tulane or the National Association of Manufacturers.¹⁰

The cost is expected to decrease further in the following years since the cost to completely outsource an average issuer's conflict minerals program is now under \$30,000. We do expect to continue some level of profiteering by predatory consulting and software companies, however we expect market forces to continue to significantly reduce costs year over year.

A recent study by Tulane University funded by software and consulting service providers showed remarkable improvement in cost modeling from their previous estimates (\$709 million¹¹ down from their original estimate of closer to \$7.9 billion¹²) but is still not representative of current costing or employment data.

Key point –

US Employment data does not support Tulane's cost assessment

A long discussion could be held on the fine points of the reasons Tulane's cost study went astray (based on survey responses – which are more common from companies with full time conflict minerals program managers and rely on contact information which is more likely to be obtainable from companies leading the compliance effort, as opposed to the average issuer). But the fundamental indictment of Tulane's cost study is that the current US employment data does not even remotely support Tulane's contention of man hours spent on compliance.

Tulane's studies identify 6 million man hours spent on compliance. With over 1,265 filing issuers, that is roughly 2.7 full time people per year. If you estimate a job turn over of at least 5% per annum, there would be roughly 171 full time job posting per annum for conflict minerals primes.

Number of current full time job postings for Conflict Minerals in the United States¹³ – 1.

There are a number of jobs where conflict minerals is a small fraction of someone's role^{14 15} (the most common situation), but only one full time internet job posting in all of the US.

¹⁰ Claigan Environmental, <https://www.sec.gov/comments/s7-40-10/s74010-431.pdf>

¹¹ Wall Street Journal, <http://www.wsj.com/articles/u-s-firms-struggle-to-trace-conflict-minerals-1438636575>

¹² Tulane University, A Critical Analysis of the SEC and NAM Economic Impact Models and the Proposal of a 3rd Model, <http://lawprofessors.typepad.com/files/tulane-study.pdf>.

¹³ Search "conflict minerals" at www.indeed.com.

<http://www.indeed.com/jobs?q=%22conflict+minerals%22&l=>

¹⁴ Thermofisher - Environmental Compliance Manager. <https://jobs.thermofisher.com/job/-/-/1143/657373?apstr=%26codes%3DIndeed&ss=paid>



As a consulting company specializing in conflict minerals, we would love for conflict minerals to be a \$709 million a year business - but it just isn't.

Final Statement

The culture of doing the bare minimum coupled with the greatly exaggerated costs of the audit provides a perfect storm for issuers to claim that it is not possible to be conflict free. The SEC would observe a significant improvement in the quality of disclosures for Section 1502 of Dodd-Frank if they used their investigative and enforcement powers. Many issuers have been taking the path of least resistance and so far these issuers have been allowed to get away with this approach.

¹⁵ Nordstrom - Social Responsibility Specialist - Nordstrom Product Group.
<http://jobs.nrf.com/jobseeker/job/25712598/Social%20Responsibility%20Specialist%20-%20Nordstrom%20Product%20Group/Nordstrom/?vnet=0&str=26&max=25&long=1>



ANNEX I - Simple Example of Issuer with Disclosure Gaps

1. Example SEC Filing

Below is an example SEC filing from a company that stated that they cannot determine whether they source from the DRC or adjoining countries (Abbott Laboratories).

We analyzed the products we manufacture or contract to have manufactured, and found that small quantities of tin, tantalum, tungsten, and gold (3TG) may be present in a number of our products; primarily, in electronic diagnostic and monitoring instruments, in medical and surgical devices and equipment, and in product components containing metal alloys. After requesting information from our suppliers as described below, we are unable to determine whether the limited quantities of 3TG actually present in our products originated from the Democratic Republic of the Congo or adjoining countries, and whether such 3TG came from recycled or scrap sources. We similarly have been unable to conclusively identify the specific facilities used to process the 3TG actually present in our products.

2. Smelter list in conflict minerals report

The conflict minerals report included a list of smelters providing tin, tungsten, tantalum, or gold to the issuer's suppliers.

Annex I

Mineral	Smelter or Refiner Name	Smelter or Refiner Country Location
Gold	Advanced Chemical Company	UNITED STATES
Gold	Aida Chemical Industries Co. Ltd.	JAPAN
Gold	Allgemeine Gold-und Silberscheideanstalt A.G.	GERMANY
Gold	Almalyk Mining and Metallurgical Complex (AMMC)	UZBEKISTAN
Gold	AngloGold Ashanti Corrego do Sitio Mineração	BRAZIL
Gold	Argor-Heraeus SA	SWITZERLAND
Gold	Asahi Pretec Corporation	JAPAN
Gold	Asaka Riken Co Ltd	JAPAN
Gold	Atasav Kuvumculuk Sanayi Ve Ticaret A.S.	TURKEY

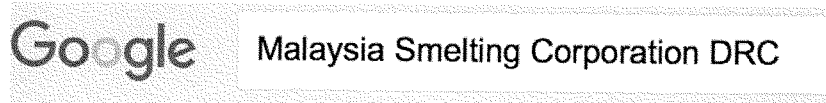
3. Example Simple Smelter Due Diligence

Included in the list of smelters provided by the issuers was Malaysia Smelting Corp.

Tin	LIUZHOU CHINA TIN	CHINA
Tin	Magnu's Minerais Metais e Ligas LTDA	BRAZIL
Tin	Malaysia Smelting Corporation (MSC)	MALAYSIA
Tin	Melt Metais e Ligas S/A	BRAZIL
Tin	Mentok Smelter	INDONESIA
Tin	Metallo Chimique	BELGIUM

4. Example Simple Smelter Reasonable Country of Origin Inquiry

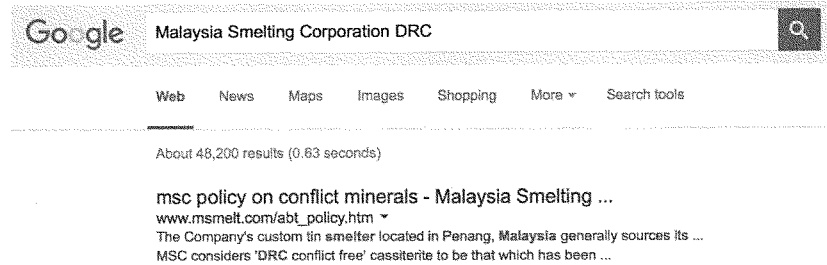
Even if the company had only conducted the most rudimentary due diligence, they would have been able to determine that this smelter sources from the DRC or adjoining countries.





5. First Google Hit

Malaysia Smelting Corporation's sourcing information is the first google hit from the search.



6. Sourcing Details

This link leads directly to MSC's sourcing details.



7. Confirmation of Sourcing from the DRC and Rwanda

MSC (which is conflict free certified) confirms that they are sourcing from the DRC and adjoining countries.

Currently between 15-20% of the tin we produce is sourced from predominantly artisanal miners in Central Africa. The majority of the smelter intake from Central Africa is currently from Rwanda and from the southern Katanga Province of the DRC that is not within the recognised conflict areas of Eastern DRC. MSC, as a leading member of the tin association ITRI, has been pro-active in developing the ITRI Tin Supply Chain Initiative (ITSCI) traceability and due diligence system designed to differentiate between conflict and non-conflict sources in high risk areas and promote progressive improvement of the circumstances of mining. All tin concentrates purchased by MSC from Rwanda and Katanga is obtained through the ITSCI programme and therefore according to internationally recognised due diligence guidance.



November 17, 2015

“Dodd-Frank Five Years Later: What Have We Learned from Conflict Minerals Reporting?”
Financial Services Subcommittee on Monetary Policy and Trade

**Enough Project Statement
Submitted for Congressional Record**

The United States Congress took a strong step forward in 2010 when it passed Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The growing number of investors and consumers in the U.S. who care about corporate responsibility, along with the people in central Africa affected by U.S. companies' sourcing practices, deserve the transparency this law requires. The value of maintaining the law as it is currently written cannot be overstated. Its sustained and strengthened implementation will continue to improve the transparency of corporate supply chains, and reduce the profits gained by armed actors in Congo from the minerals trade.

Minerals and Conflict

Conflict minerals have fueled and continue to help sustain armed violence in eastern Democratic Republic of Congo (Congo), linking them to the deadliest conflict globally since World War II. The four conflict minerals (gold, along with tin, tantalum, and tungsten, the “3Ts”) are not the only source of income to armed groups, but they are some of the most lucrative. The illegal exploitation of natural resources today is a manifestation of the grand corruption linked to violence that has marked successive governments in Kinshasa and the broader region since colonial times.

The ongoing violence is real, and its links to the minerals trade are clear. A mortality study by the International Rescue Committee looking at conflict-related deaths between August 1998 and April 2007 estimated that more than 5.4 million people died as a result of armed conflict in Congo.ⁱ There has been continuing violence since that study. The U.N. Group of Experts on Congo found in 2015 that gold continued to be a source of funding for armed groups and Congo's army.ⁱⁱ A study from the Enough Project found that armed groups made an estimated \$185 million from conflict minerals in 2008.ⁱⁱⁱ In 2007 the Pole Institute noted “minerals are a major source of income and of conflict in North Kivu as in the whole of the DRC,”^{iv} and in 2001 the UN experts found that “minerals [were] the engine of the conflict.”^v

The Law: Dodd-Frank 1502

Section 1502 on conflict minerals of the Dodd-Frank Wall Street Reform and Consumer Protection Act is a transparency measure, one part of a comprehensive approach to Congo's challenges. Passed in 2010 and implemented by the U.S. Securities and Exchange Commission in 2012, it creates a reporting requirement for all companies publicly traded in the United States with products containing any of the four conflict

minerals. This creates a lever to support transparency, security, and the rule of law in the mining sector. Companies must now publicly disclose annually whether any of the gold or 3Ts in their supply chains originated in Congo or a neighboring country and, if so, describe the due diligence measures taken to determine the source of the minerals. Dodd-Frank 1502 does not require companies to divest from Congo or source from conflict-free mines. The law only requires companies to report on their mineral sourcing and due diligence practices.

Compliance with the Conflict Minerals Rule is an achievable task for companies, of which the benefits outweigh the costs. The cost of compliance has been significantly overestimated by industry lobbyists. Claigan, an independent environmental consulting firm with expertise in supply chain management, estimates the total cost of Dodd-Frank 1502 compliance was approximately \$140 million for 2014.^{vi} This is a fraction of the U.S. Securities and Exchange Commission's estimate of \$3-4 billion for the first year.^{vii}

Impact of the Law

Consistent with its objective, Dodd-Frank 1502 along with related reforms has led to significant improvements in the transparency of corporate supply chains and to a major reduction in the number of 3T conflict mines in eastern Congo. More than 60 percent of the world's smelters for the four minerals have now passed conflict-free audits. Before Dodd-Frank 1502, there was no certification mechanism for distinguishing conflict mines (i.e. mines controlled by armed groups or the Congolese army) from conflict-free mines, and there were no federal transparency requirements for companies on conflict minerals. The law and related reforms have changed these circumstances and created a two-tier market whereby the price for untraceable 3T conflict minerals is significantly lower than the price for verified conflict-free minerals. This price difference has made the trade in 3T minerals significantly less lucrative for armed groups.

By 2014, the International Peace Information Service found that 70 percent of 3T mines it surveyed across several provinces in eastern Congo were not controlled by armed actors.^{viii} This is a significant change given that the U.N. Group of Experts stated as recently as 2010 that "in the Kivu provinces, almost every mining deposit [was] controlled by a military group."^{ix} As of May 2014, nearly three-quarters (74 percent) of 3T miners were working in mines where no armed group involvement has been reported.^x

As of November 16 2015, 206 out of approximately 321 smelters/refiners worldwide (over 60 percent) for the four conflict minerals have passed audits by the Conflict-Free Sourcing Initiative or associated programs, and an additional 43 smelters/refiners are participating in the program (i.e. are in the process of being audited) for a total of 249 participants (over 75 percent).^{xi}

There is now an emerging certification mechanism run by the International Conference on the Great Lakes Region (ICGLR), and mines have begun to be validated as conflict-free.^{xii} As of June 25, 2015, 141 mines in eastern Congo had been validated as conflict-free by multi-stakeholder teams made up of U.N. officials and Congolese civil society, business, and government representatives.^{xiii} In surveyed locations,

“minerals that do not go through conflict-free programs sell for 30 to 60 percent less” than minerals verified as conflict-free,^{xiv} thus reducing profits for armed group trying to sell conflict minerals.

Mining Communities

Dodd-Frank 1502 must be fully implemented, not abandoned, and strengthened with livelihood projects and other support to mining communities. Similar to other places where black markets are being disrupted, many Congolese miners who have relied on 3T mining have been affected by the transition to a conflict-free economy and are experiencing livelihood challenges. The original conflict minerals draft legislation included resources for livelihood programs for mining communities, but unfortunately those provisions were omitted from the final law and thus resources were not forthcoming in a timely way, causing hardship for some communities. Some aid has been disbursed to support conflict-free mining, but more support for livelihoods projects is needed. The solution to uncovering and eliminating these harmful illicit markets is not to reduce transparency measures but rather to strengthen and expand them.

Congolese Support

Finally, many Congolese communities and leaders—including Nobel Peace Prize nominee and Sakharov Prize winner Dr. Denis Mukwege, community activist Justine Masika Bihamba, and Archbishop François-Xavier Maroy Rusengo of Bukavu, South Kivu—support Dodd-Frank 1502. Leaders and activists support the law because they have seen direct positive impacts, because they believe in transparency and the rule of law, or both.

Dr. Denis Mukwege notes that:

A conflict-free minerals industry would contribute to ending the unspeakable violence the people of Congo have endured for years. Government must not only enact strong legislation, they must be willing to enforce the law. Companies bear the responsibility of compliance and public disclosure, and acting transparently as consumers are increasingly aware of conflict-free components on the market. Tens of thousands of legitimate miners would benefit from a clean, transparent minerals industry... The mineral trade is one of the components that drive suffering in Congo.^{xv}

Furthermore, an open letter signed by 31 Congolese civil society leaders, experts, and former ambassadors argues that, “It is time for another broader push for reform on conflict minerals and natural resource governance in order to complement the Dodd-Frank legislation and deepen related minerals reforms. Dodd-Frank has been the primary driver of corporate and regional policy change on conflict minerals.”^{xvi}

ⁱ Benjamin Coghlan, Pascal Ngoy, Flavien Mulumba, Colleen Hardy, Valerie Nkamgang Bemo, Tony Stewart, Jennifer Lewis, and Richard Brennan, “Mortality in the Democratic Republic of Congo: An ongoing crisis,” pp. ii, 16 (New York: International Rescue Committee, January 2008), available at http://www.rescue.org/sites/default/files/resource-file/2006-7_congoMortalitySurvey.pdf.

ⁱⁱ U.N. Security Council, "Final report of the Group of Experts submitted in accordance with paragraph 5 of Security Council resolution 2136 (2014)," S/2015/19, paras. 79, 80, 116, 124, 125, 193-198, 200, 201; Annex 36, January 12, 2015, available at http://www.un.org/ga/search/view_doc.asp?symbol=S/2015/19.

ⁱⁱⁱ The Enough Project Team and the Grassroots Reconciliation Group, "A Comprehensive Approach to Congo's Conflict Minerals," Appendix 2, p. 17 (Washington: April 2009), available at <http://www.enoughproject.org/publications/comprehensive-approach-conflict-minerals-strategy-paper>.

^{iv} Aloys Tegera and Dominic Johnson, "Rules for Sale: Formal and informal cross-border trade in Eastern DRC," p. 40 (Goma: Pole Institute, May 2007), available at http://www.pole-institute.org/sites/default/files/regard19_anglais.pdf.

^v U.N. Security Council, "Final report of the Group of Experts submitted in accordance with paragraph 5 of Security Council resolution 2136 (2014)," S/2015/19, paras. 79, 80, 116, 124, 125, 193-198, 200, 201; Annex 36, January 12, 2015, available at http://www.un.org/ga/search/view_doc.asp?symbol=S/2015/19.

^{vi} Email correspondence with Claigan, August 2015.

^{vii} U.S. Securities and Exchange Commission, Release No. 34-67716, p. 302, August 22, 2012, available at <http://www.sec.gov/rules/final/2012/34-67716.pdf>.

^{viii} Between March 2013 and March 2014, International Peace Information Service (IPIs) researchers conducted research to map artisanal mining sites in eastern Congo. IPIs researchers found 116 of 167 cassiterite mines (70 percent), 26 of 31 coltan mines (84 percent), and 11 of 21 wolframite mines (52 percent) to be free of armed groups, making a total of 153 of 219 mines surveyed (70 percent) free of armed groups in eastern Congo. By contrast, IPIs survey results showed inverted proportions for eastern Congo's gold mines, with only 330 of 943 gold mines (35 percent) surveyed free of armed actors. International Peace Information Service, "Infographic-Mapping Mining Areas in Eastern DRC," January 28, 2015, available at <http://ipisresearch.be/2015/01/infographic-mapping-security-human-rights-mining-areas-eastern-drc/>.

^{ix} U.N. Security Council, "Interim report of the Group of Experts on the DRC," S/2010/252, para. 77, p.17, May 24, 2010, available at http://www.un.org/ga/search/view_doc.asp?symbol=S/2010/252.

^x Steven Spittaels, Ken Matthysen, Yannick Weyns, Filip Hilgert and Anna Bulzomi, "Analysis of the interactive map of artisanal mining areas in Eastern DR Congo: May 2014 update" (Antwerp: International Peace Information Service, May 2014), available at http://ipisresearch.be/wp-content/uploads/2014/04/20141031-Promines_analysis.pdf.

^{xi} Electronics Industry Citizenship Coalition and Global eSustainability Initiative, "Conflict-Free Smelter Program Indicators," available at <http://www.conflictreesourcing.org/members/active-and-compliant-smelter-count/> (last accessed October 28, 2015).

^{xii} International Conference on the Great Lakes Region Mineral Certification Scheme, "ICGLR Regional Certification Mechanism (RCM) Certification Manual," available at <http://www.oecd.org/investment/mne/49111368.pdf> (last accessed August 2015).

^{xiii} Uwe Naeher and Yasmine Nzuma, "Summary of Joint Missions and CTC Mine Site Audits in Eastern DRC," Federal Bureau of Geosciences and Natural Resources (BGR), Kinshasa, June 2015.

^{xiv} Fidel Bafilemba, Timo Mueller, and Sasha Lezhnev, "The Impact of Dodd-Frank and Conflict Minerals Reforms on Eastern Congo's Conflict," endnote 5, p. 20 (Washington: The Enough Project, June 2014), available at <http://www.enoughproject.org/reports/impact-dodd-frank-and-conflict-minerals-reforms-eastern-congo-s-war>.

^{xv} Panzi Foundation, "Statement from Dr. Denis Mukwege: EU Vote is a Victory for Human Rights," May 20, 2015, available at <http://www.panzifoundation.org/news/dr-mukwege-statement-eu-conflict-minerals-vote>.

^{xvi} "Open Letter: Conflict Minerals: A Broader Push for Reform is Essential," October 30, 2014, available at http://www.enoughproject.org/files/OpenLetterConflictMinerals_October_2014.pdf.

November 17, 2015

“Dodd-Frank Five Years Later: What Have We Learned from Conflict Minerals Reporting?”
Financial Services Subcommittee on Monetary Policy and Trade

**Georges Nzabanita Iyamuremye Statement
Submitted for Congressional Record**

Dear Chairman Huizenga, Vice Chairman Mulvaney, Ranking Member Moore, and Members of the Subcommittee:

I would like to submit the following blog post from November 2013 in order convey my thoughts on conflict minerals as they relate to my life in the Democratic Republic of Congo. While studying in the United States, I had the opportunity to be a campus leader for the Conflict-Free Campus Initiative and have continued to promote the importance of conflict-free mineral sourcing since returning to my home country.

My Passion for Building Peace in Congo

My name is Georges Nzabanita Iyamuremye and I am from the Democratic Republic of Congo. I am a student at Georgetown College in Kentucky finishing my last semester of undergraduate studies. I was born, grew up and studied in Rutshuru in the North Kivu province and I went to college in Nairobi, Kenya. Since 1996, I have been surrounded by rebel armies and local militias all violently competing for power in the midst of a crowded civilian population with no infrastructure. In 1996, I lost two cousins who were killed by rebels fronted by the late president Laurent Kabila. In addition, my younger sister and her friends were victims of a mass rape by the Democratic Forces for the Liberation of Rwanda or FDLR, in my village. My family was forced to leave in fear of torture, rape, looting and killings in our neighborhoods by the FDLR together with the local militia. My family and many of our fellow villagers are still living as internally displaced persons, or IDPs, in Congo.

In 2011, I met an American medical doctor, Dr. George Record, who was working for Doctors Without Borders in my hometown of Rutshuru. I told him that I was passionate about contributing to the peace process in eastern Congo by trying to get involved with local Congolese communities working towards sustainable development, and by spreading this peacebuilding effort throughout the Great Lakes region. When I explained my desire to gain greater skills in peacebuilding and advocacy for peace and conflict resolution, Dr. Record accepted to support me for one year and a half to move to the U.S. and finish my studies in sociology and sustainable community development.

The conflicts in eastern Congo have been mostly fueled by natural resources which rebel groups smuggle through neighboring countries such as Rwanda and Uganda. Rebels in eastern Congo have no plan to change the regime of Kinshasa which is characterized by corruption in private and public sectors, but rather they are more interested in plundering the Congo's natural resources for their own gain. I understand that I must do something to advocate for peace by uniting my experiences and knowledge with organizations which believe in human rights.

At the end of September 2013, my American sponsor, Dr. Record sent me a link to the Enough Project website. I opened the link and when I saw their mission to “to end genocide and crimes against humanity” I was so excited to contact them and see how I could get involved. In early October, Annie Callaway, the Advocacy Associate and Coordinator for the Conflict-Free Campus Initiative at Enough, contacted me and I shared with her my dreams to work for peace and reconciliation for a sustainable development in

my country. I was invited to an event titled “Celebrating Congo” sponsored by Yole!Africa in North Carolina, where I was able to engage in fruitful discussions concerning advocacy and strategies for obtaining peace in eastern Congo and I became even more passionate to join the Raise Hope for Congo campaign and promote peace in Congo and the Great Lakes region.

Today, I am the campus leader of Conflict-Free Campus Initiative at Georgetown College. Twenty-two students are part of our chapter and we have gained the support of many more on campus, including Dr. Melissa Scheier, the head of the political science department and our faculty advisor. We recently hosted our first big event called “Raise Hope for Congo”, which was attended by over 80 people who were interested in learning more about the conflict in Congo, and hearing about how they can help. The Georgetown College CFCI chapter has amazing, committed students dedicated to raising awareness about the ongoing conflict in eastern Congo and asking our college to pass a resolution to support conflict-free electronics products.

I will graduate in December, and am now working to make sure that CFCI will continue its work at Georgetown College after I leave. I hope to find an internship with a human rights organization so that I can continue to build my knowledge about this type of work. I plan to return to my home in Congo soon, where I want to get involved with local Congolese communities by founding my own organization focused on reconciliation and peacebuilding for a sustainable development through a communal reflection on the root causes of the cycle of violence we have experienced for almost two decades. By combining the local, national, regional, and international effort for peace, we can prevent the social and environmental crises caused by war, and make Congo and the world a safer place to live for every person.



global witness

November 17, 2015

**House Financial Services Subcommittee on Monetary Policy and Trade Hearing on
“Dodd-Frank Five Years Later: What Have We Learned from Conflict Minerals Reporting?”
Statement of Global Witness**

Dear Chairman Huizenga, Ranking Member Moore and Members of the Subcommittee:

Global Witness welcomes the opportunity to submit a statement for the hearing on Section 1502, the Conflict Minerals Provision of the Dodd-Frank Act. Global Witness is an international advocacy organization that works to break the links between natural resources exploitation, human rights violations, corruption and conflict. For over a decade, Global Witness has carried out research and advocacy on a broad range of issues relating to natural resources in the Democratic Republic of Congo (DRC). Our work is directly informed by regular, in-depth field investigations in eastern DRC where research is done by experienced staff, some of whom have previously lived in the region. We consult with a range of Congolese local civil society partners, as well as mineral traders, provincial mining authorities and other government representatives.

For almost two decades, armed groups and members of the Congolese national army have used profits from the trade in tin, tantalum, tungsten and gold to finance themselves and their operations in eastern DRC. The local population in North and South Kivu provinces has borne the brunt of a war characterized by murder, rape, pillage and mass displacement. Although the region's mineral wealth is not the root cause of the conflict, competition for access to these resources has been an incentive for warring parties to continue fighting. Sporadic armed conflict continues today in eastern DRC has led to an estimated 2.7 million internally displaced people within the country in 2014 and, in 2015, approximately 430,000 refugees from the DRC in neighboring countries, according to the United Nations.¹ While this law will not alone end the conflict, it is intended to reduce the opportunities for armed groups to keep fighting and enrich themselves.

A landmark opportunity to address the role of minerals in fueling conflict and human rights abuses, Section 1502 is a significant step forward and has promoted global action towards making mineral supply chains responsible and free of conflict. Before Section 1502 was passed in 2010, there was very little progress by governments or companies to tackle the conflict minerals trade even though the issue had been identified as a problem since 2002. The provision has catalyzed the creation of new supply chain due diligence legislation and standards in the DRC, Rwanda, Burundi and other African countries, and the development of industry schemes aimed at facilitating responsible sourcing of minerals. It has set an important precedent for the legal responsibility of companies to ensure that their supply chains do not contribute to conflicts and human rights violations. Following the leadership of the US, the European Union is drafting its own responsible sourcing regulation.² The European Parliament has recently proposed regulation that would require supply chain due diligence for all upstream and downstream companies. The Chinese Chamber of Commerce of Metals and Chemicals Importers and Exporters (CCCME), supervised by China's Ministry of Commerce is also currently developing guidance for its members which would include supply chain due diligence as well.³ Thus, the United States is in good international company in this trend towards ensuring companies conduct reasonable supply chain due diligence in their operations.

Reporting Requirements and Status of Compliance

Section 1502 is a disclosure provision that requires, among other things, companies who manufacture products containing one of the four conflict minerals to conduct supply chain due diligence if they know or

have reason to believe those minerals originate in the Democratic Republic of Congo (DRC) or surrounding countries. The SEC's final rule requires that this due diligence be conducted in accordance with a nationally—or internationally—recognized framework.⁴ The only such recognizable framework at present is the due diligence guidance developed by the Organization for Economic Cooperation and Development (OECD). This framework is a five-step process centered on identifying and addressing risks in a company's supply chain and publicly reporting on those efforts. In June 2014, 1,321 companies filed reports with the SEC for the first reporting year. The second round of reports—1,267 in total—were filed in 2015.

In April 2015, Global Witness and Amnesty International released a comprehensive analysis of 100 of the first conflict minerals reports filed in 2014.⁵ The report found that 21% of the company reports we analyzed met the minimum requirements of the U.S. conflict minerals legislation in their first year of reporting, demonstrating that responsible supply chain management can be done, and that the requirements are not unreasonably burdensome. As such there is no excuse for companies failing to properly investigate their supply chains. Within the filings, we found a full spectrum of compliance and lack thereof: there were several reports filed by companies that included a lot of detail and demonstrated that they had undertaken their required supply checks and there were some reports that were barely a page long, with virtually no information about their due diligence efforts. Global Witness believes that the majority of companies can improve their supply chain reporting through closer adherence to the OECD due diligence guidance.

The second conflict minerals reports were released in June of this year, and we've seen some improvement in the depth of companies' due diligence and in the quality of their reporting. More companies are providing a list of the metal processors they've identified in their supply chains and more companies are providing country of origin information than in the first year. For example, Apple was able to identify an additional 39 smelters and refiners in 2015, bringing their total number to 225.⁶ In 2014, Google reported that 36% of its metal processors were certified as conflict-free, yet in 2015, the percentage of their conflict free smelters and refiners jumped to 68%.⁷ This demonstrates that even though the reports show there is still more room for improvement, companies are learning more about their supply chain as they continue to conduct due diligence on the minerals in their products, thereby reducing the risk to viability of their business operations.

We've also seen that some private and foreign companies that are not covered under the scope of the law are doing their own due diligence, showing that these supply chain checks are not as overly burdensome or costly as some industry associations have previously argued, but also that these efforts are worthwhile. For example, the computer company, Acer, has written and published its own version of a conflict minerals report on its website for two years in a row⁸, despite being a foreign company outside of the scope of Section 1502. Other non-US listed or private companies including Dell and Panasonic have also put information on their website about due diligence activities they've undertaken. Many other companies, such as Nissan and Samsung have also developed a conflict minerals policy and published their policy on their website, often in response to consumer demand.

Impacts in the DRC and Great Lakes Region

The law is gradually changing the way that supply chains are understood and, ultimately, how they function. The law has set a critical precedent for the legal responsibility of companies to ensure that their supply chains do not contribute to conflicts and human rights violations. That said, we must consider that at the time of this hearing the law is in only its third year of implementation. While progress is being made, it takes time to change behavior along supply chains that have previously been almost wholly without scrutiny.

In the upstream section of the supply chain (between the mine and the smelter or refiner of metals), Section 1502 has been a catalyst for some important reforms to DRC's minerals sector. On-the-ground efforts to clean up the mineral trade are expanding. These include private sector-led efforts, such as responsible sourcing programs like the International Tin Supply Chain Initiative (iTSCI), which now works to improve

supply chain functioning in Rwanda and Burundi as well as DRC, and domestic efforts by both the Congolese and Rwandan governments to facilitate responsible trading.

Given the intertwined history of Rwanda and DRC's conflict minerals trade, cross border steps to address regional supply chains are critical – and ground-breaking. In DRC, local NGO watchdogs have begun mine-site monitoring and surveillance. The Congolese government has led a multi-stakeholder committee made up of the DRC government, civil society groups and representatives from international donors to 'validate' 180 mines in eastern Congo as conflict-free (though there are over 2000 mining sites). Though faced with challenges, the validation missions are, at least, an indication of renewed political will in DRC to clean up the mineral sector in the east. These missions, and other efforts, have been supported by a joint Department of State and USAID strategy on conflict minerals, called for in Section 1502, as shown by the Government Accountability Office report of August 2015.⁹

There is a growing awareness among artisanal miners, regional civil society and in some sections of the Congolese army about what responsible mineral trading should look like and what the rights of miners are. In addition, there is more scrutiny over operations at mining sites. At some tin, tantalum and tungsten sites this has meant that armed men have abandoned digging, which they engaged in before the passage of Section 1502.

While there have been some positive impacts from the law, challenges do remain that have contributed to adverse impacts on the ground in eastern DRC. There was a decline in exports after the law was passed. A combination of a six-month mining ban by the Congolese President in 2010 (which was not required by the law), an overly stringent interpretation of the law by some industry groups and a crisis of confidence in the tin, tantalum and tungsten (known as the 3Ts) markets, many companies' initial response to Section 1502 was to stop buying these minerals from the DRC and covered countries – rather than to continue sourcing from the region in a responsible way. The irresponsible response to the law by some companies led to a drop in legal 3T exports from DRC and Rwanda in particular, that had an impact on many miners' livelihoods in the DRC. However, this is not entirely attributable to the law's actual requirements, but was instead a misinterpretation of the law by some companies. Section 1502 is not a sanctions regime requiring companies to stop sourcing from the DRC; it is a disclosure provision that requires companies to disclose the results of their due diligence.

Despite an initial dip in official artisanal 3T mining exports post 2010, our initial analysis of export and production data from the region indicates that legal exports increased markedly in 2014. For example, in 2010, no tantalum was legally exported from South Kivu, but in 2014, official exports were recorded at 5 tons. In North Kivu official tantalum exports since 2007 have fluctuated over time: the province exported 74 tons of tantalum in 2007, 236 tons in 2010, 122 tons in 2012 and 195 tons in 2013. In the first six months of 2014 alone official tantalum exports were recorded as 296 tons, a substantial increase.

Tackling Cross-border Mineral Smuggling

That said, Global Witness research has revealed that cross-border mineral smuggling, particularly between Rwanda and DRC, remains a problem. This appears to be motivated by a number of issues that include new Congolese laws that stipulate that minerals may only be legally exported from validated mines where a traceability scheme is operating, a lack of proper state oversight of mine site production in DRC and an (often) higher price per kilo of 3T minerals in Rwanda. The gold sector experiences a separate set of issues that are, in part, linked to its higher value by volume and the use of gold as money, making it much harder to regulate and credibly trace from mine to end-user. The Rwandan and Congolese authorities both have a responsibility to reduce cross-border smuggling. It is therefore critical that companies operating in or buying from Rwanda undertake robust supply chain due diligence, to look for and address the risk of minerals smuggled into Rwandan supply chains, which may have funded conflict in the DRC. Both sides have taken

some steps, including increasing the number of rotations at key border patrols, but more needs to be done, by governments and companies alike.

Section 1502 is about changing international business norms with respect to the way companies source their minerals—not just from the DRC. We would like to see: supply chains that are *conflict-free* rather than *Congo-free*, that benefit and support responsible trade from artisanal miners and not armed groups. We would like companies to remain engaged in high-risk areas like DRC, with the appropriate systems and risk processes in place. Divestment in order to avoid engaging in responsible sourcing or to avoid risk is not required by the law, and is an irresponsible over-reaction to the law that can lead to the most vulnerable – the artisanal miners – losing their livelihoods. Blaming Section 1502 for this divestment not only shirks responsible sourcing, but risks returning Eastern DRC to the violent free-for-all that exemplified the minerals trade prior to the law coming in.

Conclusion

This important law was not designed to be the one solution that would bring immediate peace to a war-torn region. Rather, it is an important tool aiming to tackle the economic drivers of conflict. It is already catalyzing important change but more must be done.

Policy Recommendations:

- Companies must do their part by continually working to improve the depth and scope of their due diligence and publishing meaningful and detailed reports, containing more information on their supplier outreach, identified smelters and refiners and their efforts to address supply chain risk.
- The SEC must also uphold its obligation to enforce the rule by holding companies accountable for incomplete reporting and not meeting basic requirements.
- The US government should use its influence to advocate for the DRC government to reform its mining sector at the national and local levels, including strengthening and enforcing domestic laws banning the involvement of the military in mining activities and stamping out impunity among high-ranking members of the Congolese army and other criminal and corrupt actors benefitting illegally from eastern Congo's mineral wealth.
- Governments of the African Great Lakes region, including Rwanda, must step up efforts together to reduce cross-border smuggling of minerals and enforce domestic due diligence legislation.

¹ UNHCR, 2015 UNHCR Country Operations Profile – Democratic Republic of the Congo, <http://www.unhcr.org/pages/49e45c366.html>

² European Commission, "Proposal For A Regulation Of The European Parliament And Of The Council: Setting Up a Union System for Supply Chain Due Diligence Self-Certification of Responsible Importers of Tin, Tantalum and Tungsten, Their Ores, and Gold Originating in Conflict-Affected and High-Risk Areas" March 5, 2014, http://trade.ec.europa.eu/doclib/docs/2014/march/tradoc_152227.pdf

³ CCCMC, "Guidelines for Social Responsibility in Outbound Mining Investments," <http://www.globalwitness.org/sites/default/files/library/CCCMC%20Guidelines%20for%20Social%20Responsibility%20in%20Outbound%20Mining%20Investments%20Oct%202014%20CH-EN.pdf>. See also Global Witness, "Tackling conflict minerals – How a new Chinese initiative can address Chinese companies' risks," October 2014, <http://www.globalwitness.org/sites/default/files/library/GW%20Tackling%20Conflict%20minerals%202014-10%20lr.pdf>

⁴ Securities and Exchange Commission, "Conflict Minerals; Disclosure of Payments by Resource Extraction Issuers; Final Rules," 17 CFR Parts 240 and 249b (hereafter, "SEC Final Rule"), Sept 12, 2012 <http://www.gpo.gov/fdsys/pkg/FR-2012-09-12/pdf/2012-21153.pdf>, p. 56274, 56281

⁵ "Digging for Transparency," Global Witness and Amnesty International, April 22, 2015, <https://www.globalwitness.org/campaigns/democratic-republic-congo/digging-transparency/>

⁶ Apple's 2015 Conflict Minerals Report, page 2, https://www.apple.com/supplierresponsibility/pdf/Conflict_Minerals_Report.pdf

⁷ Google's 2014 Conflict Minerals Report, <https://static.googleusercontent.com/media/www.google.com/en/about/company/pdfs/google-2013-conflict-minerals-report-v2.pdf>. See also Google's 2015 Conflict Minerals Report, <https://static.googleusercontent.com/media/www.google.com/en/about/company/pdfs/google-2014-conflict-minerals-report.pdf>

⁸ Acer's 2014 Conflict Minerals Report, http://www.acer-group.com/public/Sustainability/pdf/ConflictMineralsReport_E.pdf and Acer's 2015 Conflict Minerals Report, <http://www.acer-group.com/public/Sustainability/pdf/Conflict-Minerals-Report-2014.pdf>

⁹ GAO, 2015, "SEC Conflict Minerals Rule", August, <http://www.gao.gov/assets/680/672051.pdf>



12 November 2015

The International Corporate Accountability Roundtable (ICAR) is a coalition of leading human rights, environmental, development, and labor organizations working to ensure corporations respect human rights throughout their global operations.

We, along with our member organizations, advocated for the passage and implementation of **Dodd-Frank's Section 1502** pertaining to conflict minerals sourced from the Democratic Republic of Congo and surrounding areas. **We write today to urge continued support for this critical provision.**

The responsibility of business to respect human rights, including through supply chains, is clear and well recognized. In the United States, advancements in corporate reporting on human rights have further clarified the materiality of human rights to corporate decision-making and disclosure in recent years. For instance, the Dodd-Frank Financial Reform Act was passed in 2008, and the final rules implementing Section 1502 from the SEC were adopted in 2013. This trend is further exemplified by increased enforcement of the Foreign Corrupt Practices Act, reporting obligations created through Executive Orders pertaining to procurement, and U.S. Department of State requirements related to investments in Burma, which require public companies to conduct due diligence and make issue- and sector-specific disclosures regarding their human rights and anti-corruption practices.¹

The trend towards increased human rights reporting can also be seen in the EU. To give investors a more comprehensive understanding of company performance, the European Commission enacted Directive 2014/95/EU on December 6, 2014, which requires EU-listed companies with over 500 employees to disclose in their management reports information regarding policies, risks, and outcomes related to human rights, sustainability, bribery, and anti-corruption issues.²

International institutions, including the UN and OECD, have also sought to develop substantive and procedural standards for disclosures related to human rights and sustainability, including through the OECD's Guidelines on Multinational Enterprises, which emphasize and encourage businesses to integrate human rights and sustainability information into their routine

¹ THE INTERNATIONAL CORPORATE ACCOUNTABILITY ROUNDTABLE (ICAR), "KNOWING AND SHOWING": USING U.S. SECURITIES LAWS TO COMPEL HUMAN RIGHTS DISCLOSURE 18-19, *available at* <http://icar.ngo/wp-content/uploads/2013/10/ICAR-Knowing-and-Showing-Report4.pdf>.

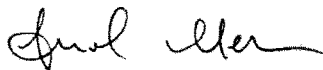
² European Commission, *Non Financial Reporting*, http://ec.europa.eu/finance/accounting/non-financial_reporting/index_en.htm.

disclosures.³ In addition, the UN Guiding Principles on Business and Human Rights (UNGPs), endorsed by the United States Government in 2011, call on businesses to report how they address human rights risks in their operations through a variety of methods, including formal reports to be made available to all affected stakeholders.⁴

Regulatory advancements aside, reporting results in clear benefits to companies. Research conducted by accounting firms Deloitte and Ernst & Young has revealed tangible benefits for companies disclosing non-financial information related to human rights and sustainability and how this information better informs investors about issues related to corporate reputation and risk.⁵ Recognizing this demand, leading financial information providers such as Bloomberg and Thompson Reuters have sought to incorporate human rights and sustainability information into their own analytics and reporting.⁶

We urge you today to indicate your strong support for Section 1502 of the Dodd-Frank Act, to stand up for a provision addressing serious and grave human rights conditions, and to understand that the trend towards corporate disclosure for human rights is increasing through regulatory regimes around the world. Section 1502 is not creating a burden on business. Instead, it brings tangible value to companies and investors. The public also benefits when companies are motivated by disclosure requirements to map their supply chains, conduct human rights due diligence, and ensure that they are engaging responsibly in their activities.

Sincerely,



Amol Mehra, Esq.
Director
International Corporate Accountability Roundtable
amol@icar.ngo

³ ICAR, *supra* note 1, at 21.

⁴ John Ruggie, Special Representative of the Sec'y-Gen. on the Issue of Human Rights & Transnational Corps. & Other Bus. Enters., *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*, U.N. Doc. A/HRC/17/31, Principle 21 (June 2011) available at http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf.

⁵ See *Value of Sustainability Reporting*, ERNST & YOUNG & BOSTON COLL. CTR. FOR CORPORATE CITIZENSHIP (May 2013), available at [http://www.ey.com/Publication/vwLUAssets/ACM_BC/\\$FILE/1304-1061668_ACM_BC_Corporate_Center.pdf](http://www.ey.com/Publication/vwLUAssets/ACM_BC/$FILE/1304-1061668_ACM_BC_Corporate_Center.pdf); *Disclosure of Long-Term Business Value: What Matters*, DELOITTE (March 2012), available at http://www.deloitte.com/assets/DcomUnitedStates/Local%20Assets/Documents/us_scc_materialitypov_032812.pdf.

⁶ ICAR, *supra* note 1, at 22.



FIGHT GENOCIDE
DO NOT STAND IDLY BY

November 13, 2015

House Financial Services Committee
Subcommittee on Monetary Policy and Trade

Dear Members of the House Financial Services Subcommittee on Monetary Policy and Trade:

Jewish World Watch (JWW) submits this statement for the record to express our support for Section 1502 of the Dodd-Frank Act. JWW is an anti-genocide/atrocities prevention organization focused on education, advocacy, and grantmaking. We have supported on the ground projects, led by local civil society organizations, in eastern Democratic Republic of the Congo (DRC) since 2009, and our staff frequently visits the region.

JWW has been, and remains supportive, of legislation that aims to curb mineral exploitation throughout eastern Congo. While conflict minerals are not the only driver of violent conflict, and legislation such as Dodd-Frank is not a panacea, it is clear that many rebel groups are able to sustain their efforts through very lucrative mineral exploitation. Cutting off the main source of funding for militias and rebel groups, and providing rebels with viable alternatives to taking up arms through effective reintegration programs, will reinforce the process of disarmament and demobilization. This is essential to ending the cycle of predatory violence throughout the region, and measures like Dodd-Frank aid in this process.

Many civil society leaders from the DRC, including JWW partners, have been outspoken in their support of Dodd-Frank. They have seen the impact transparency measures can have on resource flows to armed groups, and the long-term vision of what laws like Dodd-Frank can do to transform their country. The fact that Dodd-Frank is a piece of a long-term strategy cannot be overly stated. While the results from implementation of Dodd-Frank have already shown promise, it is important to remember that the first Conflict Minerals Reports were only submitted in May 2014. Given more time, with more companies effectively doing their due diligence reporting, coupled with measures being implemented inside the DRC, Dodd-Frank can have a meaningful impact in the region.

After analyzing 100 reports submitted from the first filing deadline, it is disconcerting to know that Global Witness and Amnesty International found that nearly 80 percent of US companies are failing to adequately follow through on their supply chain checks and disclosures. With that said, one in five companies surveyed were able to adequately comply with the law; proving compliance is achievable. To reap the full benefits of the law's intended impact, additional pressure must be exerted over companies to ensure they are complying, and more time must be given to realize the law's potential.

We ask that you use your position to encourage companies to comply with the law, and work with your colleagues to develop additional tools and resources to assist in breaking the cycle of violence in eastern Congo.

Sincerely,

Mike Brand, Director of Policy and Programs

Rabbi Harold M. Schulweis z"l, Co-Founder • Janice Kamenir-Reznik, Co-Founder & President • William S. Bernstein, Executive Director
5551 Balboa Blvd. • Encino, CA 91316 • tel (818) 501-1836 • fax (818) 501-1835 • info@jww.org • www.jww.org



Financial Services Committee Hearing
Monetary Policy and Trade Subcommittee
“Dodd-Frank Five Years later: What Have We Learned from Conflict Minerals Reporting?”
Representative McDermott Statement for the Record

“It was almost six years ago to the day that I introduced the Conflict Minerals Trade Act, which was designed to help stop trade in conflict minerals that were sustaining the brutal civil war in the Democratic Republic of the Congo (DRC).

I am very proud that many of the provisions in that original, bi-partisan bill were incorporated into Dodd-Frank Section 1502 and though we are still in the early days of its implementation, it is clear that the law is having its intended effect. After two rounds of company sourcing disclosures, we already have better identification of metal processors, greater scrutiny of supply chains, and further understanding of where American companies do business.

It is important to remember why we enacted 1502 in the first place: to take a real step forward in monitoring the mining and trade minerals that contributes to violence in the DRC. That is not to say that 1502 was ever going to end the war or even resolve the many challenges DRC faces. What my colleagues and I originally envisioned was a vehicle by which the links between the mineral trade and conflict could be broken. Measured against that objective, 1502 has already achieved substantive progress.

While opponents of Dodd-Frank in general, and Section 1502 specifically, continue to maintain that these provisions disadvantage American companies and interfere with the free flow of business, the truth of the matter is 1502 actually helps companies be part of the solution. This law set a new bar for corporate responsibility. In requiring companies to continually work to improve the depth and scope of their diligence by publishing meaningful and detailed reports, companies are better able to mitigate the risk that the minerals in their products may have funded conflict or human rights abuses.

This was designed to be a thorough and comprehensive process and I applaud those companies who from the start showed that compliance was possible by undertaking a complete and detailed account of their mineral supplies. I am further encouraged by the Conflict Minerals Disclosures that were released in June, which saw a marked improvement from the initial 2014 reports as more companies shed greater light on their supply chains.

This law is changing the way supply chains are understood, and ultimately, how they function. Moreover, 1502 is helping to create an unprecedented opportunity to reform eastern Congo’s mineral trade. The road to conflict resolution is a slow process, but absolutely a worthy one. This law, in concert with American businesses, deserves credit for taking a positive step toward

bringing about peace in one of the most violent and troubled parts of Africa. This is a good law, that benefits millions at the comparable cost of very few and its further implementation deserves fortitude, diligence, and patience.”

NAE | National Association of
Evangelicals

OFFICE 202.479.6815 | P.O. Box 25269
 FAX 202.379.9955 | Washington, DC 20026

November 16, 2015

Chairman Bill Huizenga
 Subcommittee on Monetary Policy and Trade
 Financial Services Committee
 United States House of Representatives
 Washington, DC 20515

Dear Chairman Huizenga and Members of the Subcommittee,

As you meet to review the Dodd Frank Wall Street Reform and Consumer Protection Act, please maintain and strengthen the transparency provisions of Section 1502. These reforms have already restricted the flow of illicit profits to rebel groups and criminal gangs that rape and enslave innocent civilians in conflict-ridden eastern Congo.

The National Association of Evangelicals (NAE) represents millions of evangelical Christians in nearly 40 denominations, as well as in nondenominational congregations, and numerous evangelical organizations, schools and ministries. For more than 100 years, evangelicals have generously supported missionary and humanitarian work in Congo, building hospitals, schools and churches in underserved areas. Through these connections we have become aware of the tragic impact of ongoing violent conflicts involving sexual violence, murder, pillaging and abuse of children as child soldiers. The conflict has for years been fueled by the proceeds of illicit mining operations using forced labor.

While more work is still needed, the transparency requirements of Section 1502 have significantly reduced the market price for minerals mined under illegal and inhumane conditions, thereby cutting off funding to armed rebels groups. According to monitoring reports, as many of 70 percent of mines in Congo are now free from control by armed rebel groups.

Please do not rescind or water down the requirements of 1502. To do so would endanger thousands of Congolese men, women and children and subject them to further misery and oppression. Such conditions also threaten the peace of Congo's neighbors, and destabilize the region and beyond.

NAE | National Association of
Evangelicals

NAE.net

NAE | National Association of

Evangelicals

OFFICE 202.479.0615 | PO Box 25269
FAX 202.379.9955 | Washington, DC 20026

As American citizens who care deeply about respect for human life and dignity, we seek assurance that our own funds do not inadvertently support the violation of fellow human beings. Section 1502 enables us to make ethical purchasing decisions.

Thank you for your service to our country, and for considering these concerns.

Sincerely,



Galen Carey
Vice President, Government Relations

NAE | National Association of
Evangelicals

NAE.net



16 November 2015

Statement: Dodd Frank, Section 1502
From Dr. Denis Mukwege, PhD
Founder and Medical Director, Panzi Hospital and Foundations

"A conflict-free minerals industry would contribute to ending the unspeakable violence the people of Congo have endured for years. Government must not only enact strong legislation, they must be willing to enforce the law. Companies bear the responsibility of compliance and public disclosure, and acting transparently as consumers are increasingly aware of conflict-free components on the market.

"Tens of thousands of legitimate miners would benefit from a clean, transparent minerals industry. Communities and families torn apart by conflict deserve a viable path to peace. At the Panzi Hospital and through our mobile and rural clinics, we have treated more than 40,000 survivors of sexual violence. Their bodies are used as the battlefield, leaving them with physical and psychological scars as a result. The mineral trade is one of the components that drive suffering in Congo.

These laws must be enforced. Those guilty of crimes in Congo must be brought to justice. More must be done to support the lives of ordinary men and women who work in the mines. Responsible companies should continue to source from mines in Congo and other high-risk areas that are free from armed groups. We need a conflict-free minerals trade that brings benefits from these resources to the people of Congo."



November 13, 2015

House Financial Services Subcommittee
on Monetary Policy and Trade
2129 Rayburn House Office Building
Washington, D.C. 20515

Dear Subcommittee Members:

In response to the subcommittee hearing on Section 1502, on Conflict Minerals, of the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, we are restating our support for the law and its importance to the investor community.

We represent a group of leading investors and professionals that engage in the practice of sustainable, responsible, and impact investing or "SRI." The interest in owning sustainable diversified portfolios has grown significantly in the last two years. For example, the U.S. Forum for Sustainable and Responsible Investment's [2014 report](#)¹ notes that SRI assets grew 76% between 2010 and 2012 to \$6.57 trillion, now accounting for one in six dollars professionally managed in the U.S. As fiduciaries, with a long-term view of capital appreciation, analyzing and integrating environmental, social, and governance data into our investment decision-making process is necessary and prudent.

Sustainable investors value companies' responsible management of global supply chain risks and have been particularly concerned in recent years by the use of four minerals, referred to as "conflict minerals" to fund the continuing violence in the Democratic Republic of the Congo (DRC). Conflict minerals disclosure is material to investors and will inform and improve investors' ability to:

- Assess social (i.e., human rights) and reputational risks in a company's supply chain.
- Assess a company's long-term mitigation of risks related to the supply of minerals, liability, and other material risks.

The SEC's 1502 final rule makes disclosures related to conflict minerals consistent and accessible to all investors, thereby improving efficiency in U.S. markets in allocating capital to issuers with the best overall prospects for long-term shareholder value. Although we know that the transformation to a peaceful and prosperous mining industry in the DRC region has been slow and challenging, having companies disclose information on their sourcing practices has provided investors with important transparency about this human rights risk. We believe that continued engagement and reporting on



corporate activities on this issue are vital for improvement on the ground.

Responsible Sourcing Network (RSN) coordinated several statements and recommendations by the SRI community to submit to the SEC during the rule making process. A number of the signatories on this letter played an active role in the rulemaking process. Ultimately, we believe that the final rule from the Commission appropriately considered the costs and benefits involved and charted a workable path forward for companies to report on the source of and due diligence processes associated with conflict minerals, which was set forth in the Dodd-Frank legislation.

Many of the same investors submitted a letter ([available here](#)²) to the SEC, signed by 48 investors on November 30, 2012, to express opposition to the lawsuit filed before the D.C. Court of Appeals by the U.S. Chamber of Commerce, the National Association of Manufacturers and the Business Roundtable; see Petition for Review, *Nat'l Assoc. of Mfr. v. SEC*, No. 12-1422 (D.C. Cir. Oct. 19, 2012), which sought to set aside in whole or in part the SEC's rule on Conflict Minerals. The lawsuit brought by the three industry groups undermines the protection of investors. We continue to believe that companies with the best overall prospects for long-term shareholder value will devote their risk management efforts toward successful implementation of the existing 1502 rule, rather than attempt to weaken it.

Responsible Sourcing Network's *Mining the Disclosures 2015: An Investor Guide to Conflict Minerals Reporting in Year Two*³, one of at least four recent studies evaluating companies' responses to Section 1502, shows that a significant number of companies have responded to the Congressional mandate by:

- Exceeding reporting requirements and furnishing additional transparency,
- Creating innovative solutions to due diligence challenges,
- Collaborating to an unprecedented degree in building leverage over suppliers and metal processing facilities located overseas, and
- Contributing to a prosperous, conflict-free minerals trade in the DRC region.

The report also shows that an increased number of companies have joined the Conflict Free Sourcing Initiative⁴, an initiative of the electronics industry, demonstrating that Congress' mandate in Section 1502 and the accompanying SEC rule have helped drive increased coordination among peers and industries in the private sector. Corporate funding of and participation in projects like the Public Private Alliance for Responsible Minerals Trade⁵ highlight how the law has driven increased cooperation between the public and private sector. Multi-stakeholder efforts that include the private sector are recognized by the international community as an important means toward ending the conflict in the DRC region. Section 1502 is an important tool for these initiatives that must be maintained.

Section 1502 reflects consumers' demand to know that products have been safely and ethically sourced. Such legislation has value to consumers and investors, and also benefits companies. Conflict minerals



disclosure requirements have increased some companies' knowledge of and leverage over their supply chain, and several companies reported that conflict minerals due diligence has opened up a new level of risk management for global supply chains. Companies based in other countries have also responded to Section 1502 through voluntary public reporting and industry collaboration.

This legislation is not yet fully implemented, but it is already incentivizing stakeholders on the ground in the DRC to promote mining activities free of violence. Section 1502 has brought much-needed support to leading companies who cannot change global supply chains at the needed scale without the cooperation of other industries. The law has helped raise the degree of collaboration and urgency for companies, which has contributed to a rising market demand for conflict-free minerals. [Research from Enough Project](#)⁶ shows that miners in the DRC can now make a premium for conflict-free minerals, while armed groups are only able to sell their minerals at a below-market rate. This research also shows that, with the assistance of USAID, the number of certified conflict-free mines and processing facilities is on the rise in the DRC region.

No single law can solve all the underlying problems that are causing conflict in the DRC region, but Section 1502 is already working to minimize revenue flows to the militia groups. The law has also been a catalyst for positive change in the region's mining sector, and a vital step toward a more effective response by U.S. companies to address material risk in their supply chains. Congress can learn lessons from the challenges around implementing Section 1502, and build upon its successes.

Prosperity walks hand in hand with justice. As sustainable and responsible investors we look to Congress to continue to lead in promoting a peaceful and prosperous conflict-free minerals trade in the DRC region, and to take further steps to encourage respect for human rights in the global supply chains of U.S. companies.

Yours sincerely,

Susan Baker, Vice President, Shareholder Advocacy, Trillium Asset Management, LLC
Lauren Compere, Director of Shareholder Engagement, Boston Common Asset Management
Bennett Freeman, Chair of Advisory Board, Responsible Sourcing Network
Eric Holterhues, Head of Socially Responsible Investment Funds, Triodos Investment Management
Patricia Jurewicz, Director, Responsible Sourcing Network
Emily Kaiser, Senior Sustainability Analyst, Calvert Investments
Azadeh Sabour, Associate Director, Advisory Services, Sustainalytics
Rev. David Schilling, Senior Program Director, Interfaith Center on Corporate Responsibility
Lisa Woll, CEO, US SIF: The Forum for Sustainable and Responsible Investment



Additional signatories:

Name	Title	Organization
Lura Mack	Director, Portfolio Advisory Board	Adrian Dominican Sisters
Joy Poland	Consultant	Building Bridges More Value & Profit Program
Sr. Louise Gallahue, S.C.	Provincial	Daughters of Charity, Province of St Louise
Alessandra Viscovi	CEO	Etica SGR
Mark Regier	VP of Stewardship Investing	Everence and the Praxis Mutual Funds
Shane Yonston AIF, CFP, MFP	Principal Advisor	Impact Investors
David Schilling	Senior Program Director	Interfaith Center on Corporate Responsibility
Sanford Lewis	Counsel	Investor Environmental Health Network
Lisa Heinz	CFO	Mennonite Education Agency
Molly Murphy	Chief Investment Officer	Mercy Health
Pat Zerega	Director Shareholder Advocacy	Mercy Investment Services
Michael Kramer	Managing Partner	Natural Investments
Nora M. Nash, OSF	Director Corporate Social Responsibility	Sisters of St. Francis of Philadelphia
Danielle Ginach	Impact Manager	Sonen Capital
Lisa Laird	VP, Investments and Cash Management	St. Joseph Health
Patricia Farrar-Rivas	CEO/CCO	Veris Wealth Partners
Aaron Ziulkowski	Senior ESG Analyst	Walden Asset Management
Sonia Kowal	President	Zevin Asset Management

Hyperlinks:

¹ 2014 US SIF Report. (http://www.ussif.org/Files/Publications/SIF_Trends_14.F.ES.pdf)

² Investor Letter available at (<http://static1.1.sqspcdn.com/static/f/432032/21178670/1354725030057/Investor+Stmnt+on+1502+Lawsuit+-+FINAL+Nov+30+2012.pdf?token=usyzwWODmkUN8ovq0ALsTVW1JIE%3D>)

³ *Mining the Disclosures 2015: An Investor Guide to Conflict Minerals Reporting in Year Two*. (<http://www.sourcingnetwork.org/mining-the-disclosures>)

⁴ Conflict Free Sourcing Initiative. (<http://www.conflictreesourcing.org>)

⁵ Public Private Alliance for Responsible Minerals Trade. (<http://www.resolve.org/site-ppa/>)

⁶ Research from The Enough Project. (http://enoughproject.org/special-topics/progress-and-challenges-conflict-minerals-facts-dodd-frank-1502#_edn14)

May 2013

REMAKING AMERICAN SECURITY



SUPPLY CHAIN VULNERABILITIES & NATIONAL SECURITY RISKS ACROSS THE U.S. DEFENSE INDUSTRIAL BASE

BRIGADIER GENERAL JOHN ADAMS, U.S. ARMY (RETIRED)

Disseminated by Winning Strategies Washington, an agent of a foreign principal. Additional information is on file with the Department of Justice.

ALLIANCE FOR
american
manufacturing

A Report Prepared for AAM by



CHAPTER 3 • SPECIALTY METALS

EXECUTIVE SUMMARY

Specialty metals are used in countless ways, including high-strength alloys, semiconductors, consumer electronics, batteries, and armor plate, to name a few. The United States possesses significant reserves of many specialty metals, with an estimated value of \$6.2 trillion. However, it currently imports over \$5 billion worth of minerals annually, and is almost completely dependent on foreign sources for 19 key specialty metals.

Industrial metals are a group of specialty metals that are most often added to base metals to form alloys. These metals play critical roles in many steel alloys, adding hardness, heat resistance, and strength. They are often highly reactive transition metals and require complex and expensive extraction processes. In a few cases they can only be extracted as byproducts of other metals. As such, production is dictated by production of their carrier metals, resulting in limited supply and mounting demand.

Rare earth elements (REEs), a second important group, have unique properties that make them essential for many defense products, especially high-technology ones. Currently, China dominates REE production, controlling 90 percent of global supply. This market share was achieved in part by undercutting competitors through overproduction, which drove U.S. and other mines out of business. Upon obtaining a near monopoly, Chinese producers have scaled back production to inflate prices through restricted supply. Quotas limiting the amount of raw REEs that may be exported have been used to force foreign investment in Chinese manufacturing, while exports to Japan were halted temporarily in 2010 after a diplomatic incident. Western companies scrambled to invest in REE mining to secure supplies just as the speculative bubble burst in fall 2011, sending prices downward and leaving the industry outside China in disarray. China still controls the global supply chain of REE oxides.

Production of the platinum group metals (PGMs) is dominated by South Africa. The country possesses more than 90 percent of known PGM reserves, and accounts for almost 40 percent of global palladium production and 75 percent of world platinum production. PGMs are commonly used in automotive engines and advanced electronics, and do not have viable substitutes. South Africa's dominance over PGM production threatens the integrity of defense industrial base supply chains, as political and economic instabilities within South Africa could restrict U.S. access to these metals. Recent

SPECIALTY METALS

HARNESSING THE PERIODIC TABLE

MANUFACTURING SECURITY

Specialty metals are crucial to U.S. national security and are used in a wide range of military end-items



U.S. CONSUMPTION = 1,000

Total U.S. annual consumption of new non-fuel minerals per capita



25
THOUSAND
POUNDS

RARE EARTH VULNERABILITY

China is the leading supplier of rare earth elements essential to national security



**CHINA PRODUCES
90% OF THE WORLD'S
SUPPLY OF REES**

U.S. DEPENDENCY

The U.S. is wholly reliant on foreign suppliers for 19 key minerals used in specialty metals

100% 
IMPORT-RELIANT FOR
19 KEY MINERALS

VALUABLE METALS

Many specialty metals are vastly more valuable than other commonly used metals



\$3600
PER KILOGRAM

VS.



\$1.60
PER KILOGRAM

MITIGATING RISKS

Protecting U.S. access to specialty metals



STRENGTHEN
NATIONAL
STOCKPILE



DEVELOP
DOMESTIC
CAPACITY



INTERAGENCY &
INTERNATIONAL
COORDINATION

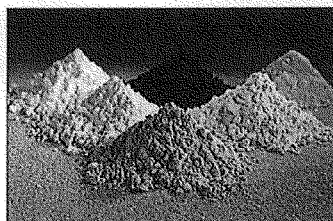
MILITARY EQUIPMENT CHART SELECTED DEFENSE USES OF SPECIALTY METALS			
DEPARTMENT	WEAPON SYSTEMS	PLATFORMS	OTHER SYSTEMS
ARMY	<ul style="list-style-type: none"> ■ Missile guidance systems (gallium, neodymium, and rhenium) ■ BGM-71 TOW Anti-Tank missile (tantalum) 	<ul style="list-style-type: none"> ■ Platforms that use Steel Armor Plate (molybdenum) ■ M1 Abrams main battle tank (tantalum) 	<ul style="list-style-type: none"> ■ Lithium-ion batteries (lithium) ■ Night Vision devices (lanthanum and gallium) ■ Laser rangefinders (neodymium)
MARINE CORPS	<ul style="list-style-type: none"> ■ Missile guidance systems (gallium, neodymium, and rhenium) ■ Submarine-launched ballistic missiles (tungsten) 	<ul style="list-style-type: none"> ■ Platforms that use Steel Armor Plate (molybdenum) 	<ul style="list-style-type: none"> ■ Lithium-ion batteries (lithium) ■ Night vision devices (lanthanum and gallium) ■ Laser rangefinders (neodymium)
NAVY	<ul style="list-style-type: none"> ■ Missile guidance systems (gallium, neodymium, and rhenium) 	<ul style="list-style-type: none"> ■ Platforms that use Steel Armor Plate (molybdenum) 	<ul style="list-style-type: none"> ■ Lithium-ion batteries (lithium) ■ Night vision devices (lanthanum and gallium) ■ Laser Rangefinders (neodymium)
AIR FORCE	<ul style="list-style-type: none"> ■ Missile guidance systems (gallium, neodymium, and rhenium) ■ GBU-28 laser-guided bomb 	<ul style="list-style-type: none"> ■ Jet engines (rhenium and tungsten) ■ MQ-1B Predator drones (indium) ■ F-22 Raptor fighter (yttrium) ■ C-17 Military transport aircraft (yttrium) 	<ul style="list-style-type: none"> ■ Lithium-ion batteries (lithium) ■ Night vision devices (lanthanum and gallium) ■ Laser Rangefinders (neodymium)

reforms have increased taxes on PGM mines and introduced Chinese investment into those mines, increasing scarcity and forcing prices to rise while creating uncertainty over the future availability of the commodities.

Mitigating these risks is complex, and strategies will vary among commodities. The United States should maintain strategic reserves of those defense-critical elements that face likely shortages (REEs and PGMs) while seeking alternative sources. Congress is beginning to give this issue the necessary attention, and is shifting towards a more bottom-up approach to securing the supply chains of key materials—but more must be done. The federal government has not formulated a comprehensive and coherent policy approach to address the national security risks of inadequate access to many key minerals and metals. Strengthening efforts to identify substitutes and improve recycling will help mitigate these risks.

INTRODUCTION

This chapter will investigate “specialty metals,” categories of metals that are also known as industrial, rare, or precious metals. Other common names for these types of metals include military, green, clean, critical, minor, technology, and strategic metals. It should be noted that specialty metals are *not* base metals (e.g. iron, copper, nickel, lead and zinc), or metals that oxidize, tarnish, or corrode easily. In addition, specialty metals are *not* energy metals (e.g. uranium and thorium). This chapter will examine specialty metals, comparing their properties and assessing their vulnerabilities with respect to U.S. military capabilities and U.S. economic



competitiveness associated with the extraction and production of these metals.

It is currently estimated that an average U.S. consumer's lifestyle requires roughly 25,000 pounds of non-fuel minerals per year, requiring massive efforts to either extract or import these materials.¹ Each year, the U.S. Department of Defense (DoD) acquires nearly 750,000 tons of minerals for an array of defense and military functions.² For example, tungsten, which is almost as hard as diamond, has the highest melting point of all non-alloyed metals, and is commonly used in turbine blades, missile nose cones, and other applications requiring exceptional heat resistance. Other minerals acquired are Rare earth elements (REEs) (some of which are used to fabricate permanent magnets), which maintain their magnetic fields even at high temperatures and are used in missile guidance and nearly every other small motor. Yet another example is palladium, which is part of the platinum metals group (PGMs), and is used in catalytic converters.

Despite possessing an estimated \$6.2 trillion worth of key minerals reserves, the United States recently recorded a small surplus on the trade balance of raw mineral materials: it exported \$9 billion and imported \$8 billion of unprocessed minerals in 2012. However, the United States runs a deficit of \$27 billion on the balance

of processed mineral materials because it exported \$120 billion and imported \$147 billion in 2012.³ In short, although the U.S. is self-sufficient in many minerals and has the chemical engineering know-how to process them, to some extent, it has chosen to rely on imports.

Increasingly, it is recognized that minerals are central to modern life and modern defense preparedness. Yet the federal government has not formulated a comprehensive and coherent response to the mineral/materials supply vulnerabilities, and there is no standard definition of which minerals or materials are critical and strategic and how the government should improve access to key minerals.⁴

The Defense Logistics Agency (DLA) Strategic Materials stores 28 commodities at 15 locations. In FY2012, DLA Strategic Materials sold \$1.5 million of minerals and materials from its stockpile. At the end of the fiscal year, mineral materials valued at \$1.4 billion remained. The stockpile is meant to help remedy the fact that the U.S. is completely import-dependent for 19 key minerals (including arsenic, asbestos, bauxite, graphite, fluor spar, indium, manganese, mica, niobium, tantalum, yttrium, and all REEs).⁵ (The DLA Strategic Materials stockpile does not adequately compensate for the import dependence on a host of minerals because it emphasizes zinc, cobalt, chromium, and mercury, which are mined or recycled in the United States.) The stockpile is meant to protect against domestic and foreign supply constraints, spiking prices, and excessive speculation. However, because the U.S. government lacks a working understanding of which minerals are absolutely critical and which are strategic, the selection of metals for inclusion in the future stockpile managed by the DLA seems somewhat arbitrary.

In the past, a global abundance of minerals has been more than able to meet U.S. demand. However, as mineral-producing countries begin to consume more of their domestic production to fuel their own growing economies, the quantities available in the global marketplace have decreased. The increased demand for minerals has encouraged resource nationalism, where countries seek to exert greater control over the extraction and processing of key elements. Furthermore, many minerals are mined in only a few countries (some of which are politically unstable), exposing the United States and other importing countries to potential supply disruptions and other risks.

This situation is widely recognized as critical. In the words of one observer, "the whole periodic table is under siege... the growing demand for complex materials is leading to exploding demand for elements that are now used in only small quantities."⁶

The metals in this chapter fall into three different groups. The first group is industrial metals (e.g. antimony, manganese, tungsten, molybdenum, vanadium, and magnesium), which are usually mixed with base metals to create alloys to manufacture different kinds of steel products. Demand has risen for these alloyed metals because of their special properties that make them essential in aviation, engine turbines, green technology, and nuclear energy. Many of these metals are scarce because they are the byproduct of the other processes and because they are expensive to produce. Moreover, processing these metals involves advanced industrial chemistry and metallurgy that is more complex than extracting copper, zinc, and iron ore.

The second group consists of REEs, which are found across a surprisingly wide variety of applications and devices that enhance modern life in advanced industrialized countries. REEs are almost exclusively mined in China, which has by far the largest concentration of these elements. Mining REEs requires a more complex process than that used to mine gold or zinc, for example. From initial extraction to production, the process takes approximately 10 days. REEs are separated based on atomic weight, with actual processing duration based on the specific element. The most abundant REE is cerium. Terbium, a heavy REE, is more difficult to extract, and its extraction can take an additional 30 days.⁷ Neodymium is also found with cerium, but the mine must first separate cerium and then extract the neodymium. This explains the length of production time and the costs. Importantly, companies cannot know beforehand whether valuable REEs are mixed in with the more common kinds, as each individual mine is different. Geologists and mining engineers must study each mine to find out which elements are available. The many engineering and processing challenges make REE mining among the most difficult types of mining operations.⁸

Mine operators need to know in advance how the REEs are going to be used so that they can determine the appropriate extraction and refining process. (Different processes must be used depending on the intended end-use of the REE.⁹) In fact, REEs are not inherently rare, but they are costly to mine and process because they are found in minute quantities mixed in with other ores. As Table 4 shows, REEs are used in a strikingly diverse range of products, including high-tech permanent magnets (see this report's chapter on magnets) and night vision devices (see this report's chapter on night vision devices).

The third group of specialty metals is very small and consists of the platinum group metals (PGMs), which are used in a range of applications such as vehicle production, future power sources, and many key military technologies. Palladium and platinum are used in catalytic converters. The largest concentrations of these deposits and reserves are found in South Africa.

Key themes discussed in this chapter are:

- Within the past decade, many countries rich in natural resources have taken a stance of “resource nationalism” and are attempting to control and manipulate extractive mining by threatening to impose extra taxes, reduce exports, nationalize mining operators, and restrict licensing.
- Western countries and mining operators face competition from less developed countries for access to specialty metals as well as from China, which has moved aggressively offshore to guarantee access to natural resources.
- Advanced industrialized countries, including the United States, have abandoned mining and mining exploration, even though global demand for economically and militarily significant ores and chemical elements has risen and will continue to rise.
- Many specialty metals are found in only a handful of countries, and often in regions that are politically and economically unstable.
- The risk of disruptions to the supply chains that use specialty metals is high, jeopardizing U.S. national security.

■ Various U.S. agencies recognize the risks, but they provide different and divergent answers and solutions. The lack of a mechanism to coordinate policies among agencies hampers the development of a comprehensive and coherent strategy.

associated with the South African government. The geographic concentration of PGM reserves, the high potential for disruption to the primary global provider, and the scarcity imposed by heightened demand indicate an *extreme* risk of these metals becoming unavailable.¹⁰

A NOTE ON CRITICALITY

Access to many natural resources is largely a function of geography. Although different types of specialty metals face different levels of risk (as described below), PGMs are consistently classified as facing the highest risks. Global reserves are situated almost exclusively in South Africa, which is the only country possessing significant long-term production capability. Limited global production capacity is coupled with high and increasing demand for PGMs, leading to high, unstable prices. Any number of events could create temporary or protracted shortages of PGMs, the most likely of which being internal political and economic instabilities

associated with the South African government. The geographic concentration of PGM reserves, the high potential for disruption to the primary global provider, and the scarcity imposed by heightened demand indicate an *extreme* risk of these metals becoming unavailable.¹⁰

An insufficient supply of PGMs would have a *significant* impact on national defense capabilities. Although PGMs are most commonly known for their role in catalytic converters that reduce emissions from internal combustion engines, they also play an important role in advanced electronics used by the military (such as guided missile systems) due to their exceptional performance and ability to withstand high temperatures.

BACKGROUND

The issue for most advanced industrialized countries is that demand for rare elements has risen, while proven reserves and mining operations are increasingly

THE COST OF FAILURE TO ADDRESS POTENTIAL SPECIALTY METALS SUPPLY CHAIN DISRUPTIONS (a notional though realistic scenario)

The inauguration of the new South African president has led to a strengthening of ties between the Republic of South Africa and the People's Republic of China. In return for financial assistance in achieving its internal developmental policies and goals, South Africa has agreed to export manganese exclusively to China. Department of Defense supply chain specialists have begun to seek other sources of the metal; however, the effect on the market of this exclusive deal is expected to be pronounced. South Africa possesses one of the largest deposits of this mineral, and the removal of this source is expected to significantly increase prices for remaining sources. Reduced manganese supply means increased defense costs, as the U.S. military is a major consumer of manganese as a component of a variety of weapons systems and capabilities, including in the manufacture of steel armor plate and munitions.

concentrated in a handful of countries that have sought to exploit their geological advantages and their desire to meet their own growing domestic needs. In 2011, the British Geological Survey published a "risk list" that employed four variables (detailed below) to assess the risk factors of 52 elements or element groups with economic value.¹¹ The variables they used were scarcity (or the abundance of elements in the earth's crust); production concentration (the location of current production); reserve base distribution (the location of reserves); and governance (the political stability of those locations). Using these categories, experts determined that the chemical elements or element groups with the highest supply vulnerabilities were antimony, which is produced in China and is used in micro-capacitors; PGMs, which

The German government also has expressed concern, as the country's large manufacturing base requires substantial amounts of REEs. As demand from emerging economies has risen, the German government has been aggressive in securing access to REEs in regions or countries other than China. The German government entered into multiple agreements with Kazakhstan to give German companies better access to REEs.¹³

Last but not least, the European Union has pushed the governments of its member states to agree to a "critical metals" list, and to approve new policies to ensure continuous access to gallium, indium, tantalum, and tungsten, in addition to REEs. One of the measures on the agenda is to establish a critical metals stockpile, which would include gallium, indium, tantalum, and tungsten.¹⁴

As the United States frees itself from fossil fuel dependence, it may replace it with dependence on energy sources from power-generating equipment that relies on specialty metals.

are produced in South Africa and used in automobile catalytic converters, fuel cells, seawater desalination equipment; mercury, which is produced in China; tungsten, which is produced in China and is a hard metal used in all cutting tools; REEs, which are produced in China; and niobium, which is produced in Brazil and used in MRI scanners, touch screens, micro capacitors, and ferroalloys.¹²

It is not surprising that the U.S. Geological Survey (USGS), DoD, the Department of Energy (DoE), and the Congressional Research Service have joined the chorus of concerned voices by publishing numerous reports and presenting long lists of critical minerals. Critical minerals are indispensable to modern life and security, yet they may be at risk because of their geographic availability, the costs of extraction and processing, the dearth of (manmade) substitutes, and limited potential for recycling. USGS puts REEs highest on their list,¹⁵ followed by cobalt, indium, and tellurium, which are needed for many important applications including magnets for motors and super alloys common in turbine blades and other aeronautical functions. In light of the rapid growth in demand for advanced batteries, most of which require minute amounts of lithium, USGS also has raised concerns about the possibility of depleting all known reserves of the element (see this report's chapter on lithium-ion batteries).

Tables 1 and 2 demonstrate the trend of the last 10 years during this relatively short period of time, U.S. import dependence has radically increased across the board.

A wide variety of metals are plagued by the same issues that account for this current state of affairs. For one, political leaders of advanced industrialized countries have abandoned mining in light of the substantial negative externalities and pollution of waterways, soil, and air. Take the example of REEs. In reality, they are abundant in the earth's crust, but they tend to be found in small concentrations and deposits. They rarely exist in pure form and must be extracted from other oxides, which increases the costs of processing. More importantly than the expense of extraction, RE mining also creates radioactive environmental pollutants.¹⁶ In every mining operation, the extraction process results in tailings (ground rock, processing agents, and chemicals), which cannot be fully reclaimed or reused or recycled. Frequently, the unrecoverable and uneconomic metals, minerals, chemicals, and process water are discharged, normally as slurry, to a final storage area. RE mining, however, produces tailings that contain radioactive uranium and thorium, which pose additional environmental threats beyond the risks associated with normal mining waste. In Western countries, governments and the public essentially have decided that it is easier to offshore this process to localities with less vocal and organized citizens or less democratic and transparent regimes. China, for example, has witnessed extreme degradation of its soil, water, and air quality to a degree that would not be tolerated in advanced industrialized countries.¹⁷

Another issue is that global demand is being driven higher by new discoveries of these metals' special properties, and by

new technological innovations in how to design, fabricate, and incorporate them into consumer and military products. For example, neodymium (an REE) combined with iron and boron was discovered to possess strong magnetic properties, and it became the foundation of the high-tech permanent magnet sector (discussed in this report's chapter on high-tech magnets). Other examples include: gallium and tellurium, which are used in completing types of solar panels; rhenium, used in the super alloys employed in jet turbines; indium, which is used in flat panel displays; and graphite, used in lithium-ion (Li-ion) batteries. Green technology (such as hybrid cars, wind turbines, electric motors, and lightweight metals) relies heavily on specialty metals and REEs.

Many technological devices consume tiny amounts of specialty metals, without which the product would not operate or would need to be much larger and heavier. For example, every guided missile requires modest amounts of oxides, the form in which REEs occur in the mineral ore. While the amount of REEs used in a guided missile is genuinely small in quantity, without them the missiles would be heavier, less precise, and less advanced. In a similar vein, some metals must be able to withstand high temperatures, which are primarily achieved by adding minor elements to steel.

Additionally, more than two billion people (notably, the populations of China and India) are moving towards higher standards of living more closely resembling those in advanced industrial nations such as the United States and those in Europe. This development means that demand for electronic devices, green technology, and other advanced applications will continue to rise and in spite of economic crises in Europe, the United States, and Japan.

**Table 1: U.S. Net Import Reliance for
Selected Nonfuel Mineral Materials in 2000**

Material	Percent
ARSENIC (TRIOXIDE)	100%
ASBESTOS	100%
COLUMBIUM (NIOBIUM)	100%
BAUXITE & ALUMINA	100%
FLUORSPAR	100%
GRAPHITE (NATURAL)	100%
MANGANESE	100%
MICA, SHEET (NATURAL)	100%
QUARTZ CRYSTAL	100%
STRONTIUM	100%
THALLIUM	100%
THORIUM	100%
YTTRIUM	100%
GEMSTONES	100%
BISMUTH	95%
ANTIMONY	94%
TIN	86%
PLATINUM	83%
STONE	80%
TANTALUM	80%
CHROMIUM	78%
TITANIUM CONCENTRATES	76%
COBALT	74%
RARE EARTHS	72%
BARITE	71%

Source: U.S. Geological Survey, Mineral Commodity Summaries
2000 (Washington DC: U.S. Geological Survey).

**Table 2: U.S. Net Import Reliance for
Selected Non-fuel Mineral Materials in 2011**

Material	Percent
ARSENIC (TRIOXIDE)	100%
ASBESTOS	100%
BAUXITE & ALUMINA	100%
CESIUM	100%
FLUORSPAR	100%
GRAPHITE (NATURAL)	100%
INDIUM	100%
MANGANESE	100%
MICA, SHEET (NATURAL)	100%
NIOBIUM (COLUMBIUM)	100%
QUARTZ CRYSTAL (INDUSTRIAL)	100%
RARE EARTHS	100%
RUBIDIUM	100%
SCANDIUM	100%
STRONTIUM	100%
TANTALUM	100%
THALLIUM	100%
THORIUM	100%
YTTRIUM	100%
GALLIUM	99%
IODINE	99%
GEMSTONES	98%
GERMANIUM	90%
BISMUTH	89%
DIAMOND (DUST, GRIT, & POWDER)	89%

Source: U.S. Geological Survey, *Mineral Commodity Summaries*
2012 (Washington D.C.: U.S. Geological Survey).

Finally, metal and mineral suppliers have witnessed booming mining sectors due to rising prices. Thanks to the rising value of natural resources, producing countries have pursued a policy of resource nationalism. Many of the most sought-after elements are found in developing countries that face multiple economic and political challenges. To finance development projects or to extract rents, governments of these countries might be tempted to push for a greater share of the profits made by mining companies. Examples of this trend are ubiquitous. Ghana has been reviewing mining contracts, and may renegotiate existing arrangements to increase governmental revenue. Zambia doubled its copper royalty to six percent. Guinea, which controls the largest known reserves of both bauxite and iron ore, has taken a 15 percent stake in mining operations. In Namibia, a state-owned company controls all new mining and exploration. Foreign mining operations in Zimbabwe must cede a 51 percent stake to local owners.¹⁸

To ensure the country benefits from its mineral wealth, South Africa may impose a 50 percent windfall tax on mining profits and a 50 percent capital gains tax on prospecting rights. The ruling African National Congress wants to collect a larger share of the resource boom. Even Australia, an advanced industrialized country, plans to impose a new, \$8 billion tax on mining.¹⁹

This state of affairs has not gone unnoticed. Since the mid to late 2000s, increased scrutiny and heightened alarm surround the fact that the U.S. economy and national security depend on specialty metals—many of which are vulnerable to supply threats resulting from sovereign risk and resource nationalism, geological scarcity, lack of viable substitutes, byproduct sourcing, and inadequate post-consumer recycling and recovery programs.²⁰

In 2008, the National Research Council Committee on Critical Mineral Impacts on the U.S. Economy (Committee on Earth Resources) compiled a statistical approximation to assess supply restrictions impact on the entire U.S. economy and defense capabilities. The report also took into consideration the technical substitution potential of a mineral.²¹

The National Research Council report presented a criticality matrix that juxtaposed the probability of a supply disruption with the overall economic impact of that supply disruption. Supply disruptions can be caused by the physical unavailability of a commodity or by increasingly restrictive prices as a result of scarcity or of artificial means. The study considered five factors that contribute to availability: geological; technical; social and environmental; economic; and political. Economic impact was assessed by the availability of a close substitute, the costs associated with that substitution, and the consequences of the supply restriction. The committee examined 11 metals or metal groups: copper, gallium, indium, lithium, manganese, niobium, PGMs (including iridium, osmium, palladium, platinum, rhodium, ruthenium), REEs, tantalum, titanium, and vanadium to determine their criticality. The study's conclusions are presented in Figure 1.

Indium, manganese, niobium, PGMs, and REEs fall in the "critical" zone of the matrix.²² They are considered critical because of the importance of their applications in catalytic converters, industrial chemical production, electronics, batteries, liquid crystal displays, and hardeners or strengtheners in steel and iron alloys. In addition, if a physical disruption or sudden price surge jeopardizes supplies, there are no readily available mineral substitutes for these applications.

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Figure 1: Specialty Metals Criticality Matrix

		SUPPLY RISK			
		low		high	
		1	2	3	4
IMPACT OF SUPPLY RESTRICTION	4			• Manganese	• Rhodium
	3	• Copper	• Tantalum	• Indium • Niobium	• Palladium • Platinum • Rare Earth Elements
	2		• Vanadium • Lithium • Titanium	• Gallium	
	1				

Source: National Research Council, *Minerals, Critical Minerals, and the U.S. Economy* (Washington, D.C.: National Academies Press, 2008). p. 165.

However, the study concludes that essentially any mineral could be considered critical, because both economic importance as well as factors influencing availability could change. Additionally, the report stresses that import dependence alone is not means for alarm; however, the

concentration of supplies in a small number of countries plagued by political instability could be disastrous. Alternatively, rapid growth in the internal demand of exporting countries could limit the quantities available on the global market, resulting in rising prices and restricted supply.

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INDUSTRIAL METALS

Industrial metals (also called minor metals) are in vogue because new uses for these metals are discovered frequently. They are classified as minor metals because until recently they were largely ignored by industry. They are not readily available or mined in the United States. Often, the elements are in fact rare and are not abundant in the earth's crust, with only a few parts per million of recoverable ore, even in the geologically significant deposits. As many of these elements are only found in a few dense concentrations globally, extraction may be dominated by a handful of countries. Subsequently, the price and supply of the element may be subject to export controls, price manipulation, and sudden disruptions. In some cases, elements are in fact a byproduct of a primary ore and are uneconomical to extract independent of the refining process for those other ores. These metals are therefore relatively costly and challenging to produce. Finally, the time required to adapt to new production and utilization processes is long, making planning and investment difficult.

The United States (along with almost all Organization for Economic Co-operation and Development [OECD] countries) relies heavily on imports for these materials, while the main producers are often countries with rapidly expanding economies (such as China, Russia, Chile, and South Africa) with sizeable and increasing domestic demand for these metals. Because certain metals are only commercially produced in a few countries, they can claim near monopolies over global reserves and influence pricing and availability.

The evolution of computing circuitry over the past three decades clearly illustrates the critical importance of industrial metals. The number of elements used in computer

circuitry has expanded from 12 in the 1980s, to 16 during the 1990s, to over 60 today.²³ These circuits are found in nearly every piece of modern technology, and especially in highly specialized, high-tech defense applications.

The summary of the industrial metals sector below includes an overview of the different metal groups, selected elements, their most significant uses, and some of the concerns surrounding these commodities. The next section presents a more general discussion of the dominant risks facing this sector. The critical importance of these metals should be readily apparent. At the most basic level, many of them are used in heat-resistant, hard metal alloys that are used in aircraft, ships, submarines, and countless other defense-related applications. Other metals are at the core of solar energy, which is necessary for defense satellites and has a growing importance for civilian energy. Others still are used in electronic components such as rechargeable batteries, which are essential to consumer electronics, communication, and hybrid engines.

THE UNIVERSE OF INDUSTRIAL METALS

Most of the elements in industrial metals are used in alloys in order to improve heat resistance, reduce the weight of a metal item, or harden steel. (Table 3 provides an overview of the different metals and their defense applications and describes the particular risks or vulnerabilities associated with each industrial metal.) Many industrial metals are in demand in consumer electronics, high-energy rechargeable batteries, and the computer industry. They also are indispensable in numerous and wide-ranging military

defense applications. Radar systems, airframes and engines, optical equipment, armor plating, coatings, electronic display screens, solar cells, and military batteries rely on small but vital quantities of industrial metals.

The universe of industrial metals can be divided into different chemical classifications. Each chemical group possesses different properties and advantages, which are further discussed below.

ALKALI AND ALKALI EARTH METALS

Alkali and alkali earth metals are located in the first two columns of the periodic table (excluding hydrogen). They are highly reactive elements, and as such, are not found in their elemental form, but instead as compounds in the earth's crust. Alkali metals (such as lithium) are relatively soft with low melting points, and form weak bonds with other elements because they have only one electron available for bonding. Alkali earth metals (such as beryllium) are harder and denser than the alkali metals, though not to the same extent as the transition metals.

LITHIUM

Lithium (Li) is a light and highly reactive metal, and is a key component of the rechargeable, high-energy lithium-ion (Li-ion) batteries that are widely used in the military and have a bright future as the main power source for electric or hybrid vehicles. Chile, Australia, Argentina, and China are the leading producers of lithium; almost the entirety of the U.S. import market comes from Argentina and Chile. Chile possesses over half of the world's known lithium reserves and is the main producer, extracting lithium from the Atacama Desert.²⁴ U.S. production of lithium is insignificant.²⁵ Because lithium is highly

reactive and reacts with water, producing the pure form of lithium is very complex and requires a dry environment.²⁶

Increase in demand for lithium, especially from China, have caused a recent expansion of production in many countries. Production of lithium was reported to have increased 20 percent in both Australia and Chile in 2011, while Chinese production was reported to have increased 30 percent.²⁷ This expansion corresponds to the growing demand for high-purity lithium for use in Li-ion batteries.

Analysts in the advanced battery sector and green technology community express considerable concern about the world's reliance on lithium, because most of the reserves are concentrated in two countries (Chile and Argentina) and may outstrip global demand as soon as 2017. Currently, there is no substitute for lithium, which is the ideal material to create rechargeable batteries and energy network stations to store surplus power from solar and wind power (see this report's chapter on lithium-ion batteries).²⁸ Unlike with other specialty metals, the main concern about lithium is not price or the potentially monopolistic behavior by foreign governments but rather that the world may face supply restrictions as reliance on technologies that require lithium increases and the world's known reserves of lithium are depleted.²⁹

BERYLLIUM

Beryllium (Be) currently is considered a material critical to U.S. national defense, and is retained in the DLA Strategic Materials stockpile. Beryllium is critical to many military systems, including the airborne Forward-Looking-Infrared (FLIR) system, missile guidance systems, and surveillance satellites. There are no

**Table 3: Industrial Metals
Properties, Uses, and Defense Applications**

Element	Atomic Symbol	Atomic Number	Uses and Applications	Significant Producers
Lithium	(Li)	3	Batteries	Chile, Australia, China, Argentina
Beryllium	(Be)	4	Lightweight alloys, radiation windows, nuclear reactors	U.S., China
Gallium	(Ga)	31	Low melting-point alloys, high-power high-frequency electronics semiconductors, light emitting diodes (LEDs), solar cells	China, Germany, Kazakhstan, Ukraine
Indium	(In)	49	Liquid crystal displays (LCDs), low melting-point alloys, bearing alloys, transistors, thermistors, photoconductors, rectifiers, mirrors	China, South Korea, Canada
Germanium	(Ge)	32	Fiber optics, infrared optics, solar photovoltaic cells, semiconductors, alloys	China
Antimony	(Sb)	51	Flame retardant, semiconductors, bearing alloys, batteries	China
Tellurium	(Te)	52	Thin-film photovoltaic panels, semiconductors, steel alloys, vulcanizing agent, synthetic fibers	China, Canada, Philippines
Vanadium	(V)	23	Nuclear reactors, springs, carbide stabilizer (alloys), batteries	China, South Africa, Russia
Molybdenum	(Mo)	42	Tempered steel, gun barrels, boiler plates, armor plating, nuclear energy, missile components	China, U.S., Chile
Tantalum	(Ta)	73	Tantalum carbide (hard-metal), Tantalum capacitors	Brazil, Australia, Mozambique, Rwanda
Tungsten	(W)	74	Tungsten carbide (hard-metal), drilling and cutting tools, specialty steels, heat sinks, turbine blades	China
Rhenium	(Re)	75	High-temperature alloys and coatings, jet engines	Chile, U.S., Peru, Poland, Kazakhstan
Palladium	(Pd)	46	Catalytic converters, multi-layer ceramic capacitors (chips), hybrid integrated circuits	South Africa, Russia, Canada, Zimbabwe
Platinum	(Pt)	78	Catalytic converters (diesel)	South Africa, Russia, Canada, U.S.

substitutes for beryllium, and in previous years there was a shortage of high-purity beryllium due to high production costs and health and safety issues. Foreign-sourced beryllium is not of sufficient purity for defense applications.

In 2005, under Title III of the Defense Production Act (P.L. 81-774), DoD invested roughly \$90 million in a private-public partnership with domestic beryllium producer Brush Wellman, Inc. (now called Materion Brush Beryllium and Composites) to produce a primary beryllium plant in Ohio.³⁰ That plant became operational in early 2011, dropping the reported U.S. import dependence from 61 percent in 2010 to 21 percent in 2011. Twelve percent of the annual U.S. beryllium consumption is attributed to defense applications. The USGS reports that the U.S. currently possesses about 65 percent of the world's beryllium reserves and, with the opening of the Materion Brush plant in 2011, accounts for almost 90 percent of world production.³¹

TRANSITION METALS

The group of transition metals contains 38 elements that are grouped together due to their common electron configuration, and are generally hard, malleable, and possess high melting points. They are good electric conductors and are often magnetic. The uses of transition metals are vast, making their use common.

RHENIUM

Rhenium (Re) is a rare metallic element that is important to the defense community because of its contribution to the properties of high-temperature alloys and coatings. The USGS reports that nearly 70 percent of rhenium is used for

high-temperature engine turbines common to jet engines, while an additional 20 percent is a key catalyst in refining oil.³² Rhenium is also used as a promoter in catalysts in gas-to-liquid operations, which may become more important in the future in light of the rapid expansion of shale gas output in the United States and elsewhere.

Rhenium is obtained almost exclusively as a byproduct of the processing of a special type of copper deposit known as a porphyry copper deposit. Specifically, rhenium is obtained from the processing of the mineral molybdenite (a molybdenum ore), which in itself is a copper byproduct. Therefore, rhenium is among the most expensive and volatile metals in the world, and its price fluctuated from \$10,000/kg in 2008 to \$3,500/kg in March 2013.³³ Currently, the United States is the world's second leading producer of rhenium (after Chile), with about a 12 percent market share. However, because rhenium is a byproduct of a byproduct, its production is limited by the production of molybdenum, which is in turn limited by copper production. In 2012, the U.S. imported nearly seven times its domestic production of rhenium, mainly from Chile and Kazakhstan.³⁴ Rhenium is part of the DLA Strategic Materials stockpile.

MOLYBDENUM

Molybdenum (Mo) is an important alloying agent that contributes to the hardening and toughness of tempered steels, and is used in steel armor plate, gun barrels, and boiler plates. Almost all ultra-high strength steels contain up to eight percent molybdenum. Molybdenum is used in nuclear energy applications and for missile and aircraft parts. Molybdenum is both mined as a primary ore and recovered as a byproduct of copper. The United States is

the second largest producer of molybdenum with about one quarter of the global share, and currently exports about half of its annual output.³⁵

VANADIUM

Vanadium (V) is used predominantly as an additive in steel that is then used in nuclear energy applications and in rust-resistant springs and high-speed tools. Ferrovanadium, an alloy of steel, accounts for 95 percent of the vanadium used in the United States. Vanadium is a non-substitutable component of aerospace titanium alloys; however, for many other applications, other metals such as molybdenum, tungsten, manganese, niobium, or titanium may be substituted for vanadium.³⁶ Small amounts of vanadium are added to iron alloys to improve corrosion resistance; ferrovanadium is mostly used in gears for cars, jet engines, and springs. The type of vanadium used in steel does not face immediate supply constraints. Due to increasing demand for steel in expanding economies, the demand for vanadium is expected to increase.

Three countries —China, South Africa, and Russia—dominate the vanadium market, and together account for more than 96 percent of current global production. The United States depends on imports for 80 percent of its domestic consumption of ferrovanadium; its main import sources are South Korea, Austria, Canada, and the Czech Republic.³⁷

Twenty percent of the vanadium market consists of vanadium pentoxide, which is more valuable than ferrovanadium. In 2012, the major exporters of vanadium to the United States were Russia (47 percent), South Africa (32 percent), and China (19 percent). Vanadium pentoxide is used as a catalyst in petroleum refineries, in

ceramics, and in super-conductive magnets. Currently, however, vanadium pentoxide is considered suitable for vanadium redox batteries, a new type of advanced rechargeable battery that is able to store renewable energy coming from wind or solar generation. This new type of battery can store more energy more efficiently than Li-ion batteries, with a faster recharge time and a longer lifecycle (see this report's chapter on Li-ion batteries).³⁸

Demand for vanadium pentoxide is expected to expand 30 percent in the next three years while supply is tight; 90 percent of the vanadium on the market is not suitable for processing into vanadium pentoxide, and is only appropriate for strengthening steel.³⁹ Vanadium pentoxide (used in large format batteries) is a byproduct of combusting fossil fuels containing vanadium. The byproducts containing vanadium pentoxide can be in the forms of dust, soot, boiler scale, and fly ash.

TANTALUM

Tantalum (Ta) is used in several alloys due to its thermal and corrosion resistances, ductility, and strength. Many types of tantalum minerals are mined in different parts of the world and possess slightly different properties. In many applications, it cannot be substituted without lessening quality. For example, tantalum carbide is among the most durable materials currently known.⁴⁰ The United States has no identified reserves of tantalum and depends on imports for all its tantalum consumption.

Tantalum is found in selected geological regions of the world, namely in the eastern areas of the Democratic Republic of Congo as well as in Australia, Brazil, Canada, and Mozambique. Furthermore, a related mineral, coltan, the industrial name for a columbite–tantalite mineral

from which columbium (also known as niobium) and tantalum are extracted,⁴¹ is widely used to manufacture capacitors found in consumer electronics, computers, and automobiles.⁴² In the last 10 years, demand for coltan-extracted tantalum has surged, stirring armed conflicts in central Africa as paramilitary groups mine and smuggle the chemical elements in order to finance their own activities. Coltan is the mineral equivalent of "blood diamonds," which received large amounts of publicity and incited a human rights campaign in the late 1990s and early 2000s. Coltan-related conflicts also have destroyed the habitat of lowland gorillas and the livelihood of numerous indigenous communities.

In spite of tantalum's importance to the U.S. economy and national security, the DLA Strategic Materials sold off most of its tantalum mineral, tantalum metal powder, metal ingots, and metal oxides in the 2000s. In 2013, it still holds small quantities of tantalum carbide powder. The latter is extremely hard and brittle, and is commonly used in tool bits for cutting applications or sometimes added to tungsten to create a metal alloy. The United States consumes 120,000 metric tons annually, with no reserves; the United States imports all tantalum from China, Germany, Australia, and Kazakhstan.

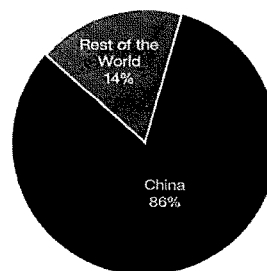
Although USGS forecasts that supplies of tantalum are sufficient for projected demand, and significant untapped reserves exist in Brazil and Australia, a third of the current tantalum production originates from politically unstable sub-Saharan African countries.⁴³

TUNGSTEN

Tungsten (W) possesses the highest melting point of all metals (3,400 degrees Celsius or 6,150 degrees Fahrenheit) and is nearly as strong as diamond. Additionally, it is an excellent electrical conductor. The most common use is as tungsten carbide, a "hard metal" known for industrial drilling and other cutting tools.⁴⁴ Additionally, tungsten carbide and tungsten alloys are used for armaments, heat sinks, turbine blades, and rocket nozzles.⁴⁵

China is the largest producer of tungsten is, accounting for about 80 percent of global production and possessing roughly two-thirds of world tungsten reserves. China is also the world's top consumer of tungsten, and using a majority of the tungsten it produces. The Chinese government actively intervenes in the tungsten industry to limit supply: foreign investment is forbidden; exports are controlled by licenses, taxes, and quotas; overall

Figure 2: Global Production of Tungsten in 2010



Source: International Tungsten Industry Association, 2011.
<http://ourmandemining.com/ul/Company%20Presentations/Ormonde%20Mining%20Website%20Presentation%20January%202012.pdf>

production is limited; and exploration and new operations are tightly controlled. In the immediate future, China is expected to be even more protective of its domestic supply, and is likely to attempt to further reduce exports as well as increase tungsten imports.⁴⁶

Accordingly, tungsten prices are expected to increase in light of increasing demand and constricted supply. Historically, the United States and Russia have stockpiled tungsten, although both countries have been disposing of their stockpiles over recent years. The Russian stockpile is thought to be depleted, while the entire U.S. government holding of tungsten has been authorized for disposal.⁴⁷

Although the United States imports a fair amount of tungsten, thanks to improved recycling of scrap consumed by processors and end-users, import reliance dropped from 63 percent in 2010 to 36 percent in 2011.⁴⁸ Nevertheless, there is only one domestic source of tungsten concentrates in the United States. The U.S. military cannot function without tungsten, and there are no substitutes for most applications. World demand slackened due to the global financial crisis, but scarcity will push up tungsten prices, especially since strategic manufacturing sectors would be willing to pay inflated prices.⁴⁹

POST-TRANSITION METALS

Post-transition metals are softer than transition metals, with lower melting points, but they have high electronegativity, meaning that they are better at attracting electrons than the transition metals and more readily form polar bonds. They are malleable, ductile, and generally good conductors.

GALLIUM

Gallium (Ga) is not produced in the United States even though it is a critical component of optoelectronic devices, solar cells, light-emitting diode (LED) lights, and photo-detectors. Gallium is essential for creating high-brightness LEDs, and many governments in Asia are committed to introducing widespread LED lighting.⁵⁰ Therefore, demand for gallium likely will increase. Moreover, gallium is also a key component for thin film photovoltaic technology, a sector expected to grow by a factor of 9 by 2018; however, falling prices of silicon-based solar cells are limiting the current demand for more expensive gallium-based cells.⁵¹ The primary military application of gallium is in high-power, high-frequency communications, such as those used in missile guidance systems. Gallium semiconductors can function at much higher temperatures than silicon, allowing them to function at a much higher capacity and reliability than more common silicon-based chips.⁵² While silicon-based alternatives may be viable for commercial uses, they are not suitable replacements for defense-related applications.

The leading producers of gallium are China, Kazakhstan, and Ukraine. The United States is roughly 99 percent import-dependent on gallium, which is produced as a byproduct of bauxite (aluminum ore) and zinc ores, making it very difficult to accurately calculate gallium reserves. United States bauxite resources generally are not economical to extract, because their high silica content makes domestic production uneconomic and very unlikely.⁵³ Because gallium is primarily a byproduct of bauxite, and only a small portion of gallium in bauxite is recoverable (approximately 50 parts per million [ppm]), it is uneconomical to recover gallium independently of aluminum. The demand for

aluminum will likely continue to dictate the world's supply of gallium.

INDIUM

Indium (In) is used in liquid crystal displays (LCDs) as the compound indium tin oxide, and is a byproduct of zinc ores. Indium is unevenly distributed in the earth's crust, causing the United States to be completely reliant on imports (although lower-grade imported indium is refined domestically). Due to its low abundance in most ores (less than 100 ppm in most zinc ores), recovering indium separately is uneconomical except as the byproduct of refining other ores. Currently, over half the world's indium is produced in China, with another 16 percent coming from South Korea. While there are techniques for reclaiming indium from discarded LCD screens, this option is only economically viable when indium prices are already high.⁵⁴

Indium is used in transistors, thermistors, photoconductors, and low melting point alloys. It can also be used to create corrosion-resistant mirrors.⁵⁵ Indium is used in short-wave infrared (SWIR) imaging, including advanced night vision applications. Its advantage over traditional night vision systems is that a single SWIR device can function in both daylight and night, and does not require the extreme cooling that alternative technologies require. Such indium devices are used in Unmanned Aerial Vehicles, such as the Spectre-Finder and Predator. Because this technology does not rely on detecting heat but rather reflected light, it provides crisp images in starlight conditions, allowing for much greater accuracy in identifying targets than the alternative imaging technologies.⁵⁶

METALLOIDS

Metalloids are elements that possess properties of both metals and non-metals. They are generally metallic in appearance, but are often brittle rather than malleable. They often possess good semiconductor qualities, and can serve as good insulators. Chemically, they behave as both metals and non-metals depending on the substance with which they react.

GERMANIUM

Germanium (Ge) is constrained in its availability because it is not found in concentrated deposits. It is relatively rare in the earth's crust (approximately 1.6 ppm), and while certain minerals do contain high levels of germanium, those minerals do not exist in any mineable deposits. Instead, germanium is most often produced as a byproduct of zinc extraction. Significant quantities of germanium are also recoverable from ash that comes from the burning of certain coals in energy production. China is the main producer of germanium, with a 68 percent market share, although significant reserves do exist within the United States. In 2011, the price of germanium nearly doubled as a result of increased Chinese export taxes and the closing of one germanium plant in China due to "environmental concerns."⁵⁷ However, germanium recycling has become increasingly common, with roughly 30 percent of consumed germanium coming from recovered scrap (recycled optical devices and window blanks in decommissioned tanks and other military vehicles).⁵⁸

Germanium is used in fiber and infrared optics and in solar photovoltaic cells. Silicon shares many similar semiconducting properties with germanium, and may be a suitable substitute (at the expense of performance).

The estimated value of U.S. germanium consumption in 2012 was only about \$55 million. Germanium sales represent an extremely small market. Yet germanium has been considered a critical material, and DLA Strategic Materials holds a small stockpiled inventory in case of sudden shortages. None was released in 2012.⁵⁹ The United States has known reserves of germanium though it has not mined them. Certain military applications will not work without germanium, and the metal's price fluctuates wildly because of the policy decisions by the most important mining regions.

The Chinese government restricts supplies by imposing new export controls or closing down germanium mines. These export restrictions are aimed at encouraging more finished production in China and stimulating the growth of an industry that relies on raw germanium such as optical lenses, fiber optics, LEDs, and solar cells. Chinese authorities have also identified germanium as a strategic resource and included it in their stockpile.⁶⁰

ANTIMONY

Antimony (Sb) is used in a variety of applications, including semiconductors and batteries. It is most widely used as a flame-retardant, which accounts for about 36 percent of its use, and for which there is no effective substitute. While antimony sometimes occurs in pure form, it is more common as stibnite (Sb₂S₃, a sulfite), with other heavy metals, and as oxides.

China accounts for about 88 percent of annual antimony production, and over 60 percent of the global antimony reserves. Government officials in the Hunan region (where nearly 60 percent of China's antimony is produced) recently closed many

antimony plants, citing health and safety concerns. As a result, the price of antimony increased by 20 percent between January and September 2011. Additionally, at current production levels, the Chinese supply is projected to be depleted within five years.⁶¹ The U.S. previously stockpiled antimony; however, these stocks were disposed of by 2003.

TELLURIUM

Tellurium (Te) is a relatively uncommon element, and acts as a semiconductor. Tellurium's major use is as an alloying additive in steel to improve machining characteristics. It is also used as a vulcanizing agent for rubber and as a catalyst for synthetic fiber and is important for photovoltaic (solar) cells, which will likely become a major source of solar electricity in the future. These cells are incredibly thin—usually only 1 to 10 micrometers (µm) thick—and can be flexible and highly adaptable to various designs in different applications. Tellurium is also used in creating fiber-optics capable of functioning in harsh environments, which are likely to become increasingly prevalent in military aircraft.

Tellurium is most often produced as a byproduct of copper processing. Tellurium is extremely rare, with its presence in copper concentrates often below 100 ppm.⁶² Most imported tellurium comes from China, although tellurium is also produced in the United States, which possesses sizeable reserves (about 15 percent of known global reserves).⁶³ The metal is commercially profitable to recover only when it is concentrated in residues collected from copper refineries.

EXTRACTION RISK FACTORS

Many of these metals or metal-type elements are in fact byproduct metals of a carrier metal such as zinc, copper, or bauxite. Consequently, many of these metals are uneconomical to produce independent of the production of the carrier metal. Demand for the carrier metal therefore drives the production of these industrial metals, creating the potential for undesirable market conditions including price spikes and shortages. Germanium, gallium, and indium, for example, are all extracted from zinc ores; gallium is also obtainable from the processing of bauxite (aluminum) ore; tellurium, gallium, and molybdenum are recovered as byproducts of copper ores. Rhenium is a special case, as it is produced as a byproduct from molybdenum, which in itself is a byproduct of copper, making it among the most expensive metals in the world.⁶⁴

Many of these elements simply are not found in concentrations high enough to warrant extraction as a primary product and are produced only as the byproduct of other metals. This fact raises problems with both increasing supply and supply availability. For example, it is uneconomical to increase the mining of copper in order to extract more tellurium. In 2009, copper production approached \$80 billion, while the production value of tellurium was only about \$30 million.⁶⁵ Because tellurium's abundance in copper ores is very low (less than 100 ppm), there would have to be a massive increase in copper production to have any impact on the tellurium supply. Given the values of the two markets, and the resultant drop in copper prices if such an expansion were to occur, producers would lose money overall if they attempted to expand the supply

of tellurium. Expanding tellurium production does not appear economically viable despite the fact that tellurium's role in photovoltaic panels that could dramatically reduce the costs of solar energy.

Another example is gallium, which is experiencing a surge in demand due to increased interest in LED lighting. Gallium arsenide (GaAs) is commonly used in high-efficiency, high-brightness LEDs because it has the ability to convert electricity directly into laser light. Many governments, including that of South Korea, are encouraging the adoption of LED lighting in the private sector and mandating it in the public sector, resulting in a rapid increase in gallium demand. According to the USGS, gallium consumption more than doubled between 2009 and 2011, resulting in a price increase of more than 50 percent.⁶⁶ However, gallium is mostly extracted as a byproduct of bauxite (aluminum). If demand for bauxite ore declines, then there would also be a reduced supply of gallium, even though the demand for gallium appears to be rapidly increasing.

GEOPOLITICAL RISKS

The United States relies on imports for many of the industrial metals (see Tables 1 and 2), a trend that has grown over the last decade. According to data collected by the USGS, the United States now imports more than 50 percent of 43 key minerals (compared to 29 in 1995). The United States is now totally reliant on importing 19 minerals, compared to 10 in 1995. Thus, import reliance or dependence has increased as the importance of certain minerals has grown.

The concentration of an important commodity among only a small number of

sources creates significant potential for supply disruptions. For example, cobalt and tantalum are produced in the Democratic Republic of the Congo. The extraction of these elements has fed political instability, poverty, and human rights violations. In other situations, the presence of raw materials encourages monopolistic practices and price manipulation. For example, South Africa nearly has a monopoly over PGMs; citing concerns over shrinking reserves, China, the dominant producer of antimony, has tightened its production restrictions. As countries become dependent on the extraction and global production of often-scarce elements, they may be tempted to impose extra fees, taxes, and prices in order to exploit their unique position in the global market. They also may be tempted to restrict exports in order to build up a domestic processing and fabricating industry, as China did with the REs market. Even in the best of cases, the United States faces risks if it depends on a few suppliers of critical elements, since a major earthquake, accident, industrial strife, or lack of investments may disrupt supplies.

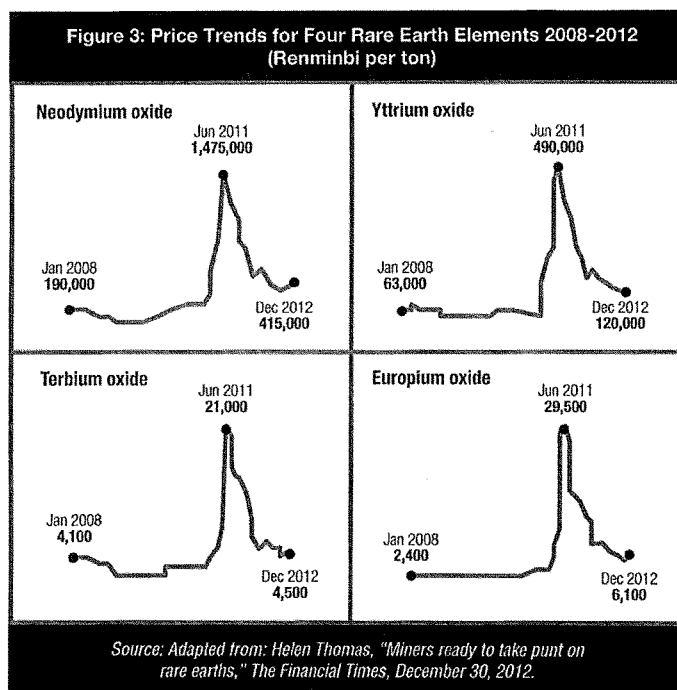
RARE EARTH ELEMENTS

REEs are necessary for many of the modern world's most advanced technologies: missile guidance systems, flat-screen TVs, cellphones, generators in windmills, and motors in hybrid cars, to name just a few. During the last decade, China has cornered the market on REEs—a group of 17 elements including scandium, yttrium, and 15 lanthanide elements at the bottom of the periodic table (see Table 4). Demand for REEs is expected to continue to increase.

In the short term, REE demand has fluctuated, because the state of the global economy strongly determines the need for REEs. Demand rose again in 2009, after the immediate impact of the global economic crisis had passed. As demand increased, the Chinese authorities cut export quotas, artificially reducing the supply of REEs. This fueled fears of possible shortages and caused stockpiling, driving prices to historically high levels by 2011. In 2012, prices plunged by as much as 90 percent in international markets (see Figure 3).

During the two years of surging prices for REEs, many mining companies and investors decided to go into the business of extracting REE oxides. When prices fell suddenly, mining companies suffered financial setbacks. In fact, the collapse of prices has been devastating for Western mining companies, which were trying to bring online new operations to take advantage of the high prices and reduce the West's dependence on Chinese oxides. Molycorp of the U.S. and Lynas of Australia suffered financial difficulties and ran into operational problems. Both companies have seen their share prices drop by more than half.⁶⁷ Many smaller players have also suffered calamitous financial setbacks, and their fate hinges on being able to mine so-called heavy REEs. Not all 17 rare earth elements are equally rare; DoE has identified five of them as "critical." Neodymium, a light REE, and dysprosium, a heavy REE, are used in permanent magnets for wind turbines or electric vehicles. Europium, terbium, and yttrium are heavy REEs, and are used in flat-screen electronics and energy-saving lightbulbs. Demand growth for these REEs will be strong, while mining them will be challenging.

REE mining is unlike any other type of mining. Unlike other metals used in many consumer and defense items, REEs are



to some extent abundant though they are hardly ever found in high enough concentrations to make mining them economical. Rather, REEs are mingled with other metals and must be carefully extracted and refined. REEs are often found together; mine operators must identify and isolate the individual oxides. Moreover, each REE oxide possesses different and distinct properties; mine operators must take the customer of their oxides into consideration. Thus, a mine that has a contract to sell neodymium must first refine the oxides and then extract the neodymium

elements. The length of this process makes REE mining costly and complex. First the miner must extract the ore, and then the mine operator must separate the REEs according to atomic weight. The various separation processes differ in complexity because some REEs (such as cerium) are common, while others (such as terbium) require a month of separation before ample oxides can be extracted.⁶⁸ Accordingly, mine operators cannot ramp up production quickly in response to changing global demand. Not only is it time-consuming to extract and refine the

Table 4: Rare Earth Elements, their Applications and Uses

Element	Atomic Symbol	Atomic Number	Applications and Uses
Scandium	(Sc)	21	Lightweight alloys
Yttrium	(Y)	39	Lasers, high-temperature superconductors, microwave filters, metal alloys
Lanthanum	(La)	57	High refractive glass, battery-electrodes, fluid-catalytic cracking, hybrid engines, metal alloys
Cerium	(Ce)	58	Chemical oxidizing agent, fluid catalytic cracking, metal alloys
Praseodymium	(Pr)	59	Magnets, lasers, ceramic capacitors
Neodymium	(Nd)	60	Magnets, lasers, neutron capture, hybrid engines, computer components
Promethium	(Pm)	61	Nuclear batteries
Samarium	(Sm)	62	Magnets, lasers, neutron capture, masers
Europium	(Eu)	63	Phosphors, lasers, nuclear magnetic resonance
Gadolinium	(Gd)	64	Magnets, high refractive glass, lasers, x-ray tubes, computer components, neutron capture, magnetic resonance
Terbium	(Tb)	65	Phosphors, magnets
Dysprosium	(Dy)	66	Magnets, lasers, hybrid engines
Holmium	(Ho)	67	Lasers
Erbium	(Er)	68	Lasers, vanadium steel
Thulium	(Tm)	69	Portable x-ray machines
Ytterbium	(Yb)	70	Lasers, chemical reduction
Lutetium	(Lu)	71	PET scanners, high refractive glass, chemical catalyst

Leslie Hook, "Chinese rare earth metals prices soar," *The Financial Times*, May 26, 2011.
<http://www.ft.com/intl/cms/s/0/751cab5a-87b8-11e0-a6de-00144feabdc0.html#axzz25SIqVbyr>;
 and Department of Energy, *Critical Materials Strategy* (December 2010),
<http://energy.gov/sites/prod/files/edg/news/documents/criticalmaterialsstrategy.pdf>

REE oxides, but deposits vary by mine and each separation plant must be tailored to the specific local situation of that particular mine. For this reason, REEs represent some of the most technically challenging mining operations.⁶⁹

Nevertheless, it is worth remembering that REEs are important to many renewable energy technologies. To a large extent, green energy technologies rely on an abundance of REEs. Electric vehicles use large amounts of neodymium and dysprosium (magnets) and lanthanum. Wind

Table 5: Selected Defense Uses of Rare Earth Elements

REE	Defense Use
Lanthanum	Night vision goggles
Neodymium	Laser rangefinders, guidance systems, communications, magnets
Europium	Fluorescents and phosphors in lamps and monitors
Erbium	Amplifiers in fiberoptic data transmission
Samarium	Permanent magnets that are stable at high temperatures, precision-guided munitions, and "white noise" production in stealth technology

Source: Hobart King REE - Rare Earth Elements and their Uses
<http://geology.com/articles/rare-earth-elements/>

turbines need large quantities of neodymium and praseodymium for their powerful magnets. Energy-efficient lighting, such as LEDs and compact fluorescent bulbs, use RE phosphor powders made from yttrium, europium, and terbium.⁷⁰

In short, the appeal of REEs lies in their ability to perform highly specialized tasks effectively (see Table 4). Europium is needed to create the red phosphor for television and computer monitors; cerium is needed to polish glass. Because they are light-weight and have high magnetic strength, REEs have reduced the size of many electronic components dramatically, and are common in consumer electronics, cars, and many military platforms. Common devices such as flash memory sticks depend on rare earth magnets (REMs), which can contain dysprosium, gadolinium, neodymium, praseodymium, and samarium. These elements are used in nuclear control rods, smart missiles, carbon-arc lamps, miniature magnets, high-strength ceramics and glass, and countless other applications.⁷¹

In spite of their importance to the overall economy and national security, for most of the past decade, the United States did not have a secure supply of REEs. (The Mountain Pass mine closed in 2002 and re-opened in 2012.) By 2010, Chinese producers moved into the global market for REEs and ended up controlling about 97 percent of world production and refining of REEs (see Chart 2).⁷² The situation has changed somewhat since 2012 because U.S. and Australian mining companies, drawn by the high prices, opened or re-opened REE mines. Currently China is estimated to control 90% of global supply of REEs.⁷³ Since the 1990s, Chinese authorities pursued an explicit policy of controlling a resource they considered "strategic and critical."⁷⁴ In the 1990s, Chinese operators (both legal and illegal) flooded international markets with low-priced oxides, ores, and raw materials. Many mining companies in the United States and Australia (a country with a wealth of natural resources) could not compete against these prices, causing many non-Chinese mining companies to shut down. Subsequently, Chinese

Table 6: United States Usage of Rare Earth Elements (2008)

Usage of Rare Earth Elements	Percent of Usage
Metallurgy & alloys	29 %
Electronics	18 %
Chemical catalysts	14 %
Phosphors for monitors, television, lighting	12 %
Catalytic converters	9 %
Glass polishing	6 %
Permanent magnets	5 %
Petroleum refining	4 %
Other	3 %

Source: Hobart King REE - Rare Earth Elements and their Uses
<http://geology.com/articles/rare-earth-elements/>

operators have gained control over many different mineral resources while driving out production in advanced economies. In Australia, dozens of mines closed in the early 2000s due to a collapse of prices for many metals. In the United States, the Mountain Pass Mine in California, which is owned by Colorado-based Molycorp, closed in 2002 as production became uneconomical due in large part to Chinese mercantilist practices.

In the 2000s, Chinese authorities decided that, rather than exporting raw materials, it would be preferable if the processing, refining, and fabrication of final product applications would take place in China itself so that Chinese companies could

reap the benefits of the added value. In 2007, Beijing instituted a 25 percent export tax on europium, terbium, and dysprosium. In 2010, Chinese authorities implemented further export restrictions on REEs by tightening export quotas.⁷⁵ The impact of a series of new measures to restrict the export of REEs meant that foreign REE consumers were paying a third more for REEs than Chinese fabricators. According to the World Trade Organization, Chinese manufacturers of REEs have a distinct price advantage over foreign firms.⁷⁶ In response, many foreign refiners and producers of final products that use REEs relocated to China to gain access to REEs and to avoid the export quotas and taxes. Japanese and U.S. companies established

a foothold in China and moved production and manufacturing offshore. (In another chapter of this report, we examine permanent magnets and present an extreme case of outsourcing and offshoring that has led to a situation wherein the defense industrial base wholly depends on Chinese processing of REEs and the U.S. economy and defense industrial base must import virtually all of their high-tech magnets.)

China's near monopoly in this strategic sector raised concerns in Washington, D.C., and Tokyo, particularly when China suspended REEs shipments to Japan during a diplomatic dispute in 2010. That incident, combined with broader concerns about the reliability of Chinese supply, triggered a surge of investment in RE mines outside China and brought down prices and speculative hoarding of REE oxides. Subsequently, the small REE global market has been depressed. In response, China cut production of REEs at its mines, in an effort to bolster global prices; this production cut has had a huge impact on prices. Current market dynamics do not support high RE prices. Supply is up and demand is down.

Supply is up because non-Chinese companies have aggressively invested in REE mining. Japanese companies have opened rare earths mines and processing in Kazakhstan, India, and Vietnam. The production of elements outside China is predicted to grow tenfold over five years, from 6,000 tons in 2011 to 60,000 tons in 2015.⁷⁷ According to industry analysts, as of March 2013, 50 rare earth mineral resources are active, associated with 46 advanced rare earth projects and 43 different companies, located in 31 different regions within 14 different countries. The large and sudden investments in REE mining and processing have brought prices down, especially as global demand has softened.

However, China may ultimately retain its dominant position. The price squeeze is making it unprofitable to continue operations in advanced industrialized countries. Molycorp reopened Mountain Pass Mine when prices skyrocketed. But the mine mostly produces light REs, which are relatively abundant and the least valuable. Australia's Lynas Corp. opened a mine called Mt. Weld, which also produces light rare earth oxides. Both companies have promised to find more valuable heavy REEs. These oxides are more difficult to locate; China possesses them in abundant quantities. Even if mines outside China can locate heavy REs, the issue remains that China is an extremely low-cost producer. It will be difficult for companies in the United States or Australia to compete with Chinese mines when Chinese authorities are lax in enforcing health, safety, and environmental rules. REE mining is notorious for generating massive amounts of toxic waste. Occupational safety rules as well as environmental controls make mining in the United States (and other OECD countries) more expensive than in China. However, the cost differentials between countries may be especially striking when the extraction is accompanied by a comparatively high amount of radioactive tailings, as is the case with REEs.

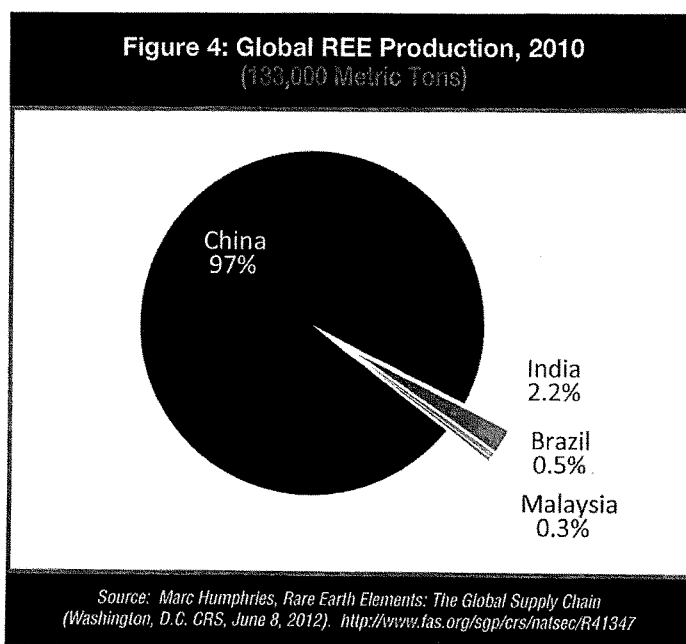
Ultimately, the real issue is not the oxides. Mining and separating the oxides is the first step in using REEs for commercial and defense applications. The real trick lies in converting the oxides into powders, metals, alloys, and magnets. Mining is costly, but the real technological skill involves processing the RE oxides into usable items. That technology has shifted to China, which has sought to build up a "mine-to-magnet" vertical integration. The supply chain starts with oxides and then moves to refining, purification, manufacturing metal alloys, and finally to fabrication of magnets.

The critical technology for manufacturing these magnets is overseas—mostly in China. China captured the market gradually by transferring U.S. technology to China and flooding the market with cheap magnets in the early 2000s. Since then, China has continued to improve its manufacturing expertise and now possesses a depth of engineering skills.

This explains why Molycorp bought a Canada-based REE company, Neo Material Technology, which runs major manufacturing facilities in China. Molycorp cannot process the oxides into fabricated and finished products in the United States.

The U.S. mine ships RE material to China, where REEs such as dysprosium and neodymium are transformed into military-grade magnets.⁷⁶

In the FY2007 National Defense Authorization Act (NDAA), Congress passed reforms to the specialty metals restrictions and created the Strategic Materials Protection Board (SMPB). The SMPB was meant to determine what protections were necessary to ensure the supply of materials for national defense purposes; assess potential risk associated with the non-availability of those materials; and advise policymakers on how to ensure



that supply. The SMPB is required to meet at least once every two years, publish recommendations regarding materials critical to national security, and vet the list of specialty metals.

The SMPB met twice in 2008 and issued its report and recommendations in December 2008 and February 2009.⁷⁹ The boards concluded that specialty metals were *not* “materials critical to national security,” but instead “strategic materials” that warranted monitoring but not domestic source restrictions.⁸⁰ Alternatively, the Board recommended relaxing or removing domestic source requirements in an effort to reduce costs and more readily access specialty metals produced abroad.

The FY2010 NDAA required the Government Accountability Office (GAO) to assess the domestic and global availability of REMs, their importance to defense programs, and the potential for the supply of these metals to be restricted. As a result in the April 2010, GAO issued the report “Rare Earth Materials in the Defense Supply Chain” (GAO 10-617R).⁸¹ The report stated that dependence on Chinese suppliers puts future availability of REMs—especially neodymium—at risk. The report also stated that projected domestic supply options would take seven to 15 years before becoming fully operational, primarily due to state and federal regulations. At the time of the GAO report, DoD was still in the process of evaluating defense vulnerabilities, and was scheduled to complete its analysis by September 2010. That report has never been released to the public.

The FY2012 NDAA calls for DLA to submit a plan to DoD to establish a stockpile of REMs, as well as to provide a broader assessment of source reliability. The DLA report, which was scheduled for completion in July 2012, would require a DoD

decision on the plan within 90 days of submission. At present, the DLA maintains a stockpile of 28 materials with a value of about \$1.4 billion, but does not currently stockpile any REs.⁸² In a significant change that increases the authority of the U.S. government to address stockpile deficiencies, Sec 901(a) of the FY2013 NDAA says that the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy is now responsible for “[e]nsuring reliable sources of materials critical to national security, such as specialty metals, armor plate, and rare earth elements.” DoD issued its *Strategic and Critical Materials 2013 Report on Stockpile Requirements* in March 2013 and identified 23 strategic and critical materials. The report calls for a fund of \$1.2 billion to mitigate the shortfall of key materials.

Separate from the NDAA, the 112th Congress introduced at least 13 bills (nine in the House of Representatives, four in the Senate)⁸³ relating to REs; however, none has yet passed out of the relevant committee. Additionally, the Congressional Research Service has conducted at least three studies focused on REs and specialty metals, while GAO has released one. Broadly speaking, these reports indicate that Congress should demand renewed assessment by DoD of the “strategic materials” categorization in light of recent global supply chain concerns, and suggest policies including stockpiling REs and reinvesting in domestic research and production. These suggestions appear to be conditional on a new assessment of the SMPB/DoD, which appears reluctant to take any further action without an additional mandate from Congress. It does not appear that DoD is likely to alter its opinion expressed in the FY2011 Industrial Capability Report to Congress, which stated that, although securing a non-Chinese source of REs is essential,

only minimal provisions (such as prioritizing defense applications over commercial applications) are required.⁸⁴

To some extent, DoD's position dovetails with the interests of large defense contractors who prefer to source the small amount of magnets they need from cheap Chinese suppliers rather than to deal with U.S.-based producers.

In conclusion, although prices have dropped and shortages have disappeared in the short term, the Chinese authorities continue to meddle and intervene in the global market for RE oxides, mostly because they control the global mining of these oxides and seek to take advantage of that position. The long-term Chinese goal is to foster a high-tech RE industry in China while preserving RE reserves.⁸⁵

PLATINUM GROUP METALS

The PGMs (also sometimes called platinum group elements, or PGEs) include iridium (Ir), osmium (Os), palladium (Pd), platinum (Pt), rhodium (Rh), and ruthenium (Ru). PGMs have excellent resistance to heat and serve as catalysts for chemical reactions, contributing to their uniqueness and importance in a variety of applications.

The most prominent application of PGMs is in catalytic converters, which dramatically reduce the pollution from automobiles. Many PGMs, especially palladium, are used as catalysts in fuel cells that find wide applications in the auto industry. Since the global car industry is projected to expand in the next decades (Chinese and Indian consumers), demand for palladium will continue to grow.⁸⁶ In addition, palladium is also used in fuel cells in

hybrid cars. Thus, the switch to cars emitting fewer pollutants will not necessarily sharply reduce the demand for palladium.

In addition, platinum and palladium are extremely common in most electronic devices, including military hardware. Although the actual per-unit metal content is minute, a huge quantity of palladium is needed to meet the growing demand for electronic goods. Multi-layer ceramic capacitors (MLCC), which regulate the flow of electricity through a circuit, represent the largest demand for palladium from the electronics industry. While the automotive industry mostly consumes palladium as components of catalytic converters, automobiles also contain a large number of hybrid integrated circuits (HIC), which make use of silver-palladium tracks to connect different components of the circuit.⁸⁷

Platinum is reportedly used in some capacity during the fabrication process of more than 20 percent of all manufactured goods.⁸⁸ It is malleable, ductile, resistant to corrosion, and possesses a high melting point around 1,770 degrees Celsius (3,215 degrees Fahrenheit). Its uses include electronics and chemical catalysts, in addition to many other applications. Platinum is up to 30 times as rare as gold (another precious metal).

Platinum and palladium supplies are potentially at risk due to their geographic concentration in areas that face political instability. In 2011, global production of platinum was dominated by South Africa (72 percent) and Russia (14 percent). The material is found in large commercial concentration in only a few regions of the world, yet the future of energy, transportation, and the environment relies on platinum. Platinum's catalytic property aids emissions control in transportation

and combats pollution. Demand is bound to increase, not only in advanced industrialized countries, but also in emerging markets as governments seek to control emissions and smog. U.S. federal agencies' reports identify platinum as subject to supply risks with enormous consequences for the U.S. defense and the economy at large.⁸⁹

In 2011, South Africa accounted for about 38 percent of palladium production, and Russia 41 percent. In all, South Africa controls more than 95 percent of known PGM reserves.⁹⁰ Two North American mines extract palladium, but their share of global new production amounts to only 14 percent.⁹¹ Since the 1980s, the Russian government has held a stockpile of palladium. The actual size of the Russian stockpile has long been a closely guarded secret. But when prices were exorbitantly high in the early 2000s, they sold a large portion of the stockpile, bringing down the price of palladium.

South Africa traditionally has been aligned with the West; its business environment is open to Western foreign direct investments and capital flows. Yet many observers are extremely concerned about the political situation in South Africa and the possibility that its political instability may place future supplies at risk. South Africa copes with many internal tensions and conflicts. For example, different factions within the ruling African National Congress are pressing for a more aggressive policy towards the natural resource sector in order to extract greater revenues to accelerate economic development and foster wider redistribution.

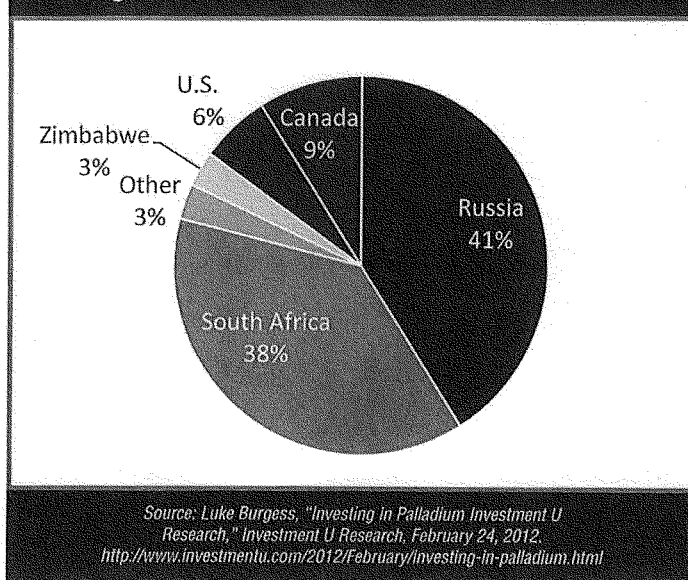
Additionally, the South African government has failed to invest in society's infrastructure; as a result, many public sectors are starved of capital. Also, the

current vulnerabilities in the mining sector may create a window of opportunity for more determined outside forces to gain control over a slice of the South African mineral wealth. The South African Mining Charter requires mining companies to be at least 26 percent owned by historically disadvantaged South Africans.⁹² After two decades, the black empowerment objectives have not fundamentally changed the ownership structure of the mining industry, except for some smaller junior mines. These mines are scrambling for capital infusions, which may come from Chinese investors, which means that Chinese companies are moving into the PGM sector by propping up junior mining companies in South Africa. Another issue is that labor relations in some of the largest mines are fraught with conflict and tension. In the summer of 2012, a standoff between management and miners resulted in the deaths of dozens of miners and a shutdown of platinum mines. Strikes and labor unrest subsequently spread to other mines, pushing up prices of platinum and gold.⁹³

As industrial strife and stoppages reduced the supply of platinum to its lowest level in a decade, the sluggish global economy and a rebound in scrap supply have kept prices within its historic range. Platinum sales from South Africa dropped by 12.5 percent in 2012, yet platinum's price fell from a high of \$2,290/oz in 2008 to \$1,605/oz in March 2013.

The risk is that the depressed prices will deter investments in ailing South African mines and therefore generate future supply constraints. Low prices for platinum and other PGMs have exacerbated the plight of the South African mining industry, which needs to make enormous investments to upgrade existing facilities and improve productivity.⁹⁴

Figure 5: Global Palladium Production, 2011



While major South African mining companies face an uncertain and difficult future, Chinese investors have entered the market to assist junior mines in South Africa—a move that matches its larger strategy in sub-Saharan Africa. Concerned about supply risks to its the Chinese economy and determined to build up its military capabilities, Chinese authorities identify access to raw materials as one of their major foreign policy goals. To prevent any supply disruptions, China has been very active in sub-Saharan Africa, which is one of the regions of largely untapped metals and minerals. In turn, China's investments and presence

is welcomed in some African countries. Chinese authorities also do not exert pressure on African governments about human rights, transparency, political freedom, internal politics, environmental standards, or ethical trading practices.⁹⁵ The entry by Chinese investors or state holdings into the South African PGM sector should be a source of concern, especially as the established mining sector struggles with low productivity and underinvestment.

For these reasons, most OECD countries perceive PGMs as one of the groups of specialty metals with the single highest

risk factor. First, there are no obvious substitutes for palladium and platinum, yet they are indispensable for the global production of vehicles, engines, and computer storage devices. Moreover, supply risks are high because of the political conditions in South Africa, which pull the South African government in conflicting directions, resulting in disappointing mining performance. Labor disputes add another layer of uncertainty, as discontent among workers about working conditions and pay creates a volatile atmosphere. The financial situation in some smaller start-up mines is often delicate, and provides Chinese operators with the means to gain control over sectors of the mining operations. Finally, many mines require major upgrades, and the overall transportation, power, and public service infrastructures in South Africa are in steady decline.⁹⁶ The other country with substantial deposits of PGMs is Russia. Mining in Russia is a risky business and many mines have failed to attract private sector capital. With the fall of communism, state-owned mines were privatized and distributed to a handful of individuals. Because commodity prices were low, capital was sent overseas rather than reinvested in the mines, resulting in the decline of the Russian mining sector.⁹⁷

Today, while greater attention is devoted to the mining sector, Russia is perceived as an unpredictable place for investments. Its economic and political environment is stable, but the mining sector is subject to arbitrary non-transparent decisions and immense bureaucratic hurdles. Obtaining a permit to explore a region is daunting because of the many technical and administrative rules. Once a company has secured an exploration license and identified a resource, it must apply for a mining license, which requires extensive paperwork as well as approvals from different

levels of governments and authorities. The whole process may take years and discourages investment and expansion. Foreigners are also dissuaded by various laws that privilege domestic operators over foreign investors. The Russian state has issued laws protecting "strategic" assets, including raw materials.⁹⁸

MITIGATING THE RISKS

The metals and chemical elements discussed in this chapter are a diverse group and require a differentiated approach, but the following recommendations will mitigate risks for most of them.

Increase the exploration of alternative sources for the elements and thereby secure a diversification of the supply chain. Deposits of specialty metals are found in smaller concentrations in various parts of the United States. For example, northeast Minnesota is thought to possess deposits of underground copper, nickel, platinum, palladium, and gold. While it seems unlikely that this region can meet all U.S. needs, mining these deposits would lessen the reliance on imports from unstable parts of the world and also reduce the impact of any future supply restrictions.

The United States should continue the search for substitute and synthetic materials to replace REEs and REMs. Even if mining companies find more geological concentrations of exotic elements, in reality at some point the United States will run out of easily accessible resources. Manmade composites would be the long-term solution to increased dependence on the scarcer elements of the periodic table.

Recycling must be improved, strengthened, and increased. Manufacturers and

producers should use extracted materials in ways that facilitate recycling and re-use. The more that is recycled, the less the economy will be dependent on imports.

A new system of stockpiling or inventory should be designed to mitigate the impact of possible supply disruptions. The DLA currently stores 28 commodities valued at over \$1.4 billion. Although the stockpile contains quantities of PGMs, it does not hold REEs, and it does not appear to be properly coordinated with other agencies. To operate more efficiently, DLA Strategic Materials should adopt a sensible and proactive plan to acquire materials when prices are weak and coordinate with downstream users. Congress has recently taken steps that will enable U.S. stockpiling efforts to be more proactive; however, sustained, high-level attention will be necessary.

The United States should continue to adequately fund the USGS, which collects and analyzes data, without which it would be very difficult to pursue a mitigation strategy in the first place. USGS is a critical agency in gathering and disseminating information on the state of affairs of our natural resources. Past budget cuts have caused the USGS to struggle to meet one of its principal objectives: to inform the nation of the status of its geological resources and warn of the potential for emerging supply constraints.

Enforce greater interagency coordination, which is critical to mapping out a proper long-term strategy for managing our specialty metals supply chain. DoE, DoD, and the White House Office of Science and Technology Policy all have issued reports on how to address the critical materials agenda. There should be greater coordination and collaboration in establishing a common approach to

addressing the risks of supply constraints of critical and strategic materials. In addition, since other advanced industrialized countries face very similar challenges, it would also be helpful to foster greater international cooperation and coordination among the European Union, Japan, Australia, and Canada, including possible collaboration on topics such as resource mapping, substitutes, and recycling.

U.S. foreign and security policy has paid limited attention to sub-Saharan Africa, which possesses some of the world's richest concentrations of key minerals. China has been very active in Africa to ensure that it has a presence in countries with large concentrations of strategic minerals. Because the continent supplies many of the most strategic minerals, U.S. foreign, trade, and security policy should focus on ensuring continued access to African mineral deposits.

CONCLUSION

Many minerals already were labeled as critical and strategic in the early 1980s. Advanced technologies upon which our economy and national security depend are themselves heavily dependent on specialty metals and minerals. Nevertheless, over time the United States has become more dependent on imports of key minerals from countries with unstable political systems, corrupt leadership, or opaque business environments. Moreover, the countries themselves (notably, China) have taken a more aggressive posture towards mineral resources and now compete with Western mining operators for extraction control.

The United States is not the only Western country that has increasingly ignored the economics of mineral extraction. Many

electronic devices, green technology, and advanced weapon systems rely on a host of exotic chemical elements. An overarching strategy linking DoD with other government and industry stakeholders is imperative to address potential shortages before they impact U.S. national security.

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LIONEL HEALING/AFP/Getty Images

Mining workers stand on a muddy cliff as they work at a gold mine in 2008 in the northeastern Congo.

by [Sabri Ben-Achour](http://people.marketplace.org/people/sabri-ben-achour/) (/people/sabri-ben-achour)
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Three hours from the nearest city and 120 feet underground, at the end of a long tunnel just big enough for a person to crawl through, 25-year-old Nami Fusi is listening to his favorite music while digging.

"Here, this is a patch!" he says, shoveling. Fusi is one of the Democratic Republic of Congo's estimated 500,000 artisanal miners.

"We advance a meter or two each day," he says. He can spend as many as 12 hours down here, pursuing purple seams in the hard orange clay, hoping to see flecks of gold appear on his shovel or spring from his pick.

This is how a lot of the mining in Congo has been done for the past few decades: by hand. Ores regarded as the "cellphone elements" – the three T's: tungsten, tantalum and tin – were mined in much the same way. These ores earned the moniker "conflict minerals" because the profits made from mining them halved to finance armed groups in Eastern Congo that controlled mines and waged brutally violent campaigns against one another and against civilians. The groups killed nearly a million people by the most conservative estimates, and possibly as many as 6 million.

Many things can shut down a mine like the one worked by Nami Fusi – collapses, toxic gases, and, it turns out, the Dodd-Frank act.

"Which, in itself, I think sounds a bit odd," notes Aloys Tegera, wryly. Tegera is director of the Pole Institute, a

<http://www.marketplace.org/topics/world/long-arms-us-law-reach-congo>

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think tank based in the Congo in Goma. "There was this strong American lobby, they wanted to slot into this American internal act, something concerning Congo."

Within the 2,300 pages of Dodd-Frank is one small section that requires companies that buy minerals from Congo to certify whether those minerals are financing armed groups. The idea was to help end the atrocities that armed groups were committing. Outside of Capitol Hill, pressure to do something came in the form of campaigns on campuses, Facebook and YouTube to hold cellphone companies and computer makers accountable.

"But they didn't really foresee the reaction, the local reaction, how it was going to work," says Tegera, referring to lawmakers.

Reaction was swift and dramatic. In 2010, many companies started looking elsewhere for minerals. The government of the DRC, finally waking up to the issue of conflict minerals, unilaterally suspended all mining operations. Even when the suspension was eventually lifted six months later, many international companies realized they couldn't certify anything about Congolese minerals. Not when the supply was dominated by long chains of middlemen and thousands of workaday people — men and women with picks and hammers. So companies stopped buying.

"They didn't buy, these past few years, they don't buy anymore," says Gaspard Kashafali, an unemployed miner wearily standing on the side of a street in Bukavu. "I can't do this job anymore, and up until now I have nothing. I earn nothing. I don't work." Before Kashafali was a miner, he was a guerrilla fighter in the Mai Mai, one of the Congo's dozens of armed groups.

"Artisanal miners were all of a sudden unemployed," says Tegera. It was a defacto embargo.

There were broader ripple effects beyond miners, says Tegera. "Government revenue dropped, and we had for instance local traders who would sell spare parts, food, beer, and these people also couldn't sell."

Tegera and others allege that the loss of jobs pushed erstwhile guerrilla fighters like Kashafali back to the banditry trade, ironically increasing insecurity — contrary to the aims of the efforts to reign in conflict minerals.

The initial suspension, which closed down legitimate mining operations, also allowed rebel groups out of the reach of government, like the National Conference for the Defence of the People, to monopolize the mineral trade in the short term as they smuggled their materials into Rwanda or Uganda.

Unlike the artisanal miners, "industrial mining operations were not hit," says Tibere Kajemba, program director at Observatoire Gouvernance et Paix, a human rights organization. "They have a closed supply chain, they can show that their minerals are conflict free."

Not unintended

Roby Whitney was legislative director for Rep. Jim McDermott, R-Wash., and the lead drafter of the Dodd-

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Frank section on conflict minerals. Whitney bristles at the notion that drafters weren't aware of the consequences.

"When you're going to break a black market, and provide some chance for peace and prosperity in the region, there's going to be some dislocation," he says. "And it was worth some amount of dislocation to stop funding the killing of a thousand people a day."

"This behavior has been going on for 20 years, funding a huge war, and we are saying you have to care about this, be transparent at a minimum," Whitney says.

Tegera and others complain that if the people behind Dodd-Frank knew in advance what would happen to the miners, they failed to come up with a plan to support them.

Attempts to cope

Four years into the disruption to one of Congo's most important industries, numerous efforts have arisen to help artisanal miners trace the origins of their products to show it is "clean." That's what designers of the law hoped for.

The human-rights organization that Kajemba leads is helping the DRC government monitor mines for the presence of armed groups. They also monitor for adherence to other standards banning child labor and pregnant women or women carrying small children on their backs from working in the mines. The organization has helped put together a classification system of green sites (conflict free and up to standards), yellow sites (meets some standards but not others), and red sites (armed groups are demonstrably present).

There are also programs that bag and tag ore mined by artisanal workers, offering a seal of sorts that marks the minerals as conflict free.

"These programs exist and have been ratcheted up, so there's an improvement," says Jason Stearns, senior fellow at NYU's Center on International Cooperation. "But we are at such a low level – fewer than a dozen areas out of hundreds, and its very cumbersome infrastructure."

These programs have almost certainly not been able to absorb all the displaced miners. Nor are all of these classification systems internationally recognized, which means they are not sufficient for a company to meet the requirements of Dodd-Frank.

A consequence of the traceability schemes has been the creation of monopoly dynamics, says Laura Seay, an assistant professor at Colby College in Maine. Her research focuses on U.S. foreign-policy effects in the African Great Lakes region.

"In the places where there is traceability, there's only one buyer. That buyer gets to set the price. There are miners who think they are being cheated and are probably right, in terms of what they're getting for the minerals," Seay says. "And so what we're seeing is that it's a relatively tiny number of miners who are benefiting from the new traceability schemes and the vast majority are still excluded."

Bitter medicine

One of the U.S. groups largely behind the Dodd-Frank section on conflict minerals is the Enough Project, a Washington, D.C., nonprofit with a mission to end genocide and crimes against humanity. For proponents like Fidel Bafilamba, the Enough Project's country director for DRC, the law is like Quinine: bitter but necessary. He admits that many miners suffered under the rule, but he argues that the people working in mines under the control of armed groups suffered without the rule.

When armed groups and militaries took over, "artisanal mining became synonymous [with] tragedy, malediction to the local communities." He compares the condition of some mining communities controlled by armed groups to urban areas like Goma, "despite the nice buildings coming up in Goma, these communities still have nothing."

And despite the hardship, the law worked, Bafilamba says.

"Five years back, most of the mines – especially three T mines – were under the control of armed militias. Today, 67 percent of mines are conflict-free," he says.

The International Peace Information Service, a Belgium-based independent research institute promoting peace and development in Sub-Saharan Africa, backs up this claim. However only a third of gold mines are conflict-free.

Silver linings and gold chains

There is no reliable data on exactly how many miners were put out of work in the long run, and to what extent their financial hardship persists. A World Bank-funded report suggests one possibility: It estimates four out of five artisanal miners in the DRC are now working in gold, a largely unregulated and untraced sector.

"There's been a large migration from the three T's – tantalum, tin, tungsten – to gold, which is by far the largest mining trade or sector in the eastern Congolese economy," NYU's Stearns says. "So that has buffered and cushioned the impact of Dodd Frank."

Gold has also offered armed groups an escape route.

Gold has a high intrinsic value, and it doesn't need to be smelted or refined before attaining that value. It is also easily smuggled, easily sold, and many of the mines are in areas not fully controlled by the government. Now that cellphone minerals are less profitable, it is the alternative of choice for both miners and militants.

You definitely have more armed groups benefiting from gold. That is shown in data we have gathered this year," says Anna Bulzoni, an analyst with the International Peace Information Service. "It is very challenging to say that gold is sourced responsibly right now."

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Two-thirds of gold mines in the Congo operate under some kind of armed group according to the International Peace Information Service.

The main hubs for gold are in places that so far have not been particularly active in the global conversation on conflict minerals," says Bulzomi. "For instance, a lot of gold from the [African] Great Lakes region ends up in Dubai where the level of commitment is not as high as the U.S. or EU or players with large roles in other supply chains," she says.

A pilot project at the Nyamorale gold mine where Nami Fusi works is seeking to change this, but it is one out of more than 600 sites. Other sites are in isolated or rebel-controlled areas where conflict free certification programs are not possible, but from which smuggling certainly is.

Competing narratives

Dodd-Frank's harshest critics say that the law missed the point. "It underestimated or overestimated the government's ability to provide law and order," says Tegera. The underlying factor behind Eastern Congo's lawlessness and illicit mineral trading is not mineral wealth, it is a collapsed, feckless government. To address the conflict international organizations and governments should strengthen the government's ability to do what governments do: provide services and stability, according to Tegera with the Goma-based think tank.

For those like Bafilemba, who favor Dodd-Frank's approach of taking action at the economic level, the DRC government's fecklessness is precisely the reason not to wage reform through said government. "They are not interested in stability, or basic services," he says. For Bafilemba – who views the current Congolese government as a puppet of neighboring Rwanda and the United States, bent on extracting Congo's mineral wealth for personal or foreign gain – working to support the government's capacity before reforming it would be counterproductive.

"We won't know whether [Dodd-Frank] has been a success or failure for another five or six years," says Stearns, the NYU fellow. He says the law could have used "more foresight and preparation ... but the baby shouldn't be thrown out with the bathwater," he says. "Now that it's in place we have to work with it and improve it." Stearns says the current standard put in place by the law requires too high a burden of proof to certify that a mineral is conflict free. "Supply chains are so confused through so many intermediaries that it's impossible to verify" to that standard, which he says should be lowered.

"No, it's the standard," says Whitney, one of the law's drafters. "If you bring a toy into this country and it's painted, you need to know whether it was made with lead paint or slave labor. You're not allowed to say 'I'm bringing something in this country with lead paint in it and it's too complicated for me to figure out, so sorry people got poisoned.'"

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Of minerals and men

Regardless of the government's utility and role in the minerals sector, Congo's minerals are not the primary driver motivating the armed groups operating here.

"According to the U.N., only 8 percent of conflicts are over resource conflicts – fighting over control of a mine to have access to particular mineral resources, but that means the other 92 percent of conflicts are not about minerals," Seay says. It is about identity, belonging, ethnicity and money.

In the past, many of those conflicts were funded by minerals but, Seay says, "in a wartime economy, everything looks like a source of revenue."


"If one source goes away, that doesn't have an effect on the violence because the armed groups continue to finance their activities through a wide variety of means," she says.

Groups have funded themselves by trading charcoal, timber, marijuana, even by poaching animals. "The M23 group that existed in 2012 and 2013, they were bringing in 200, 300, \$400,000 a month just by informally taxing trade at a border post."

The conflict-mineral cellphone narrative "was very deliberately chosen because it is simple, anyone can understand it, it's relatable – everyone has a mobile phone. So if you say your phone has blood in it fueling violence, that gives everyone an immediate and personal connection. It's very clever."

The problem, says Seay, is that despite "the good intentions of mobilizing people around the issue when you have a simple narrative, it's reductionist and leaves out important dimensions of the crisis."

That is one thing that both critics and supporters of Dodd-Frank can agree on: The roots of the conflict are deep and wide, and no simple stroke of a pen by an outside power can solve that problem alone.



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Sabri Ben-Achour is a reporter for Marketplace, based in the New York City bureau. He covers Wall Street, finance, and anything New York and money related.

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Comments

How Dodd-Frank Is Failing Congo

The campaign to stop conflict minerals is supposed to be protecting people's lives in one of the most fragile parts of Africa. In fact, it seems to be doing the opposite.

BY LAUREN WOLFE | FEBRUARY 2, 2015

Minerals are ruining lives. For several years now, in conversations about conflict and crisis in the Democratic Republic of Congo, this has been a common refrain.

About \$24 trillion worth of gold, tantalum, tin, and tungsten are estimated to be in Congo's eastern hills. They are dug from the fertile, brown mud there through exploitation: Kilos upon kilos of rocks and water are lifted and filtered each day for a few dollars per laborer. Minerals are smuggled, too, and help to line the pockets of the security guards, militias, and Congolese soldiers who lord over mining sites, wielding weapons and perpetrating sexualized violence against women. By extension, the advocacy message goes, the "conflict minerals" from Congo that wind up in devices like iPhones cause rape. U.S. electronics and other expensive, shiny things fuel war. Individuals and companies must not buy dirty minerals, because exposing and cleaning up supply chains will reduce the stranglehold armed groups have on Congo's mines.

These ideas helped shape a tiny section of the Dodd-Frank financial reform law, passed by the U.S. Congress in 2010, called Section 1502. This section requires companies registered with the U.S. Securities and Exchange Commission to disclose whether they are receiving tantalum, tungsten, tin, and gold from Congo, and whether those minerals are connected to sites of conflict, which is determined through an expensive certification process on a mine-by-mine basis by something known as the Regional Certification Mechanism of the intergovernmental International Conference on the Great Lakes Region. Companies had to file their first disclosures in May 2014.

Disseminated by Winning Strategies Washington, an agent of a foreign principal. Additional information is on file with the Department of Justice.

But declaring products “conflict-free,” as the label is known, is not so simple, many critics say, and the message that Congo’s minerals cause rape and other horrors is not exactly true.

At the beginning of September, 70 academics, researchers, journalists, and advocates published a blistering open letter criticizing Dodd-Frank and its backers, asserting that the groups and activists pushing to stop the trade of conflict minerals risk “contributing to, rather than alleviating, the very conflicts they set out to address.” Their campaign “fundamentally misunderstands the relationship between minerals and conflict” in Congo, the signatories said. (Some critics have gone further still, charging that the advocates who sculpted and pushed Dodd-Frank have even misrepresented, in the name of what they see as a greater good, the situation on the ground in Congo.) Two months later, on Nov. 30, the *Washington Post* published a long investigative feature describing how Dodd-Frank “set off a chain of events that has propelled millions of miners and their families deeper into poverty.”

Ben Radley, a signatory of the September letter and an independent researcher who is making a documentary about Dodd-Frank’s impact in Congo, summed his concerns up in an interview: While the concept of conflict minerals is convenient for people far from Africa, it is inducing incredible hardship for the miners and their families. “Congoese miners,” he said, “are paying to ease the consciences of Western consumers.”

At the root of this dilemma is a series of loudly propagated myths about what is going on in Congo’s mines, how conflict is affecting the country, and how exactly the supply chain that feeds minerals into the global market is regulated.

It is high time these myths were dispelled.

* * *

Myth: Armed groups control and rely on most of Congo’s mines, and Dodd-Frank has helped to counteract them.

Mirelle Mbale has used a jagged rock for a stool as she works since she was three years old. Squatting in a long red skirt, she sifts the coppery dirt of eastern Congo through a piece of mesh as fine as she can find — the tinier the holes, the more bits of gold distinguish themselves in her smashed-up stones, and the more money she is paid. With the \$1 to \$5 she earns each day, Mbale supports her herself and her daughter. “I pay my rent and the food ration for my household,” she said in an interview in 2014. Although she suffers dust in her lungs and pains in her back, she said she hopes her work in the mine will help her realize her dreams: “getting my daughter an education up to the university level, and buying a small piece of land to take care of my household.”

Mbale is one of an estimated 8 million to 10 million people who rely on mining to earn a living in eastern Congo. Where Mbale works, at a gold mine in Kamituga in South Kivu province, armed warlords are not a problem. Her mine is controlled instead by civilian men who insult and neglect her, she said.

Many Congolese mines, in fact, are not controlled or affected by armed groups. Radley and Christoph Vogel, an independent analyst on Africa, wrote in September in the *Washington Post* that their own fieldwork, backed up by other academic research in eastern Congo, shows that mines controlled by armed actors actually constitute “a small number.” It is hard to determine exactly how many, because the number is always shifting in the murk of conflict; it is “very dynamic and very unstable,” said Sophia Pickles, the lead campaigner on conflict minerals at the U.K.-based advocacy organization Global Witness, which focuses on resources and corruption around the world. But Radley and Vogel’s work at least provides a snapshot of the situation on the ground.

Barnard College political science professor Séverine Autesserre has offered a broader critique in a similar vein: In 2012, she estimated that only 8 percent of the country's ongoing conflict has anything to do with natural resources. Moreover, in the September 2014 letter, the signatories noted that "armed groups are not dependent on mineral revenue for their existence." Many groups can easily turn from minerals to palm oil, charcoal, timber, or cannabis to make money — not to mention extortion, illegal taxes, and other means. What's more, some civilians who work in artisanal mining began doing so as a way to support themselves when militias pushed them out of their agricultural fields, academics and activists in eastern Congo said in interviews.

In other words, the relationship between mining and conflict is not nearly as clear-cut as many Dodd-Frank backers say. Nonetheless, the anti-conflict-minerals campaign has focused intensely on this link.

Recently, the claim has been pushed even further: Advocacy groups — especially the Enough Project, a U.S.-based anti-genocide group and a key supporter of Dodd-Frank — have asserted that the 2010 law has decreased the presence of armed groups at Congo's mines. The Enough Project said this past summer that such groups have lost power of over two-thirds of mines they previously controlled because of Dodd-Frank. According to *the Guardian*, Enough said it had carried out "five months of field research in eastern Congo, interviewing 220 people in 14 mines and towns, in addition to 32 interviews in the U.S. and Europe." What did it find? "Armed groups and the Congolese army are no longer present at two-thirds (67 percent) of tin, tantalum, and tungsten mines surveyed in eastern Congo's North Kivu, South Kivu, and Maniema provinces," the group told the newspaper.

The assertion that any decrease was due to Dodd-Frank, however, is simply impossible to prove. That two things — armed groups' loss of control and the law's implementation — happened over the same four years (2010 to 2014) does not mean that the latter caused the former, Laura Seay, an assistant professor of government at Colby College and one of the September letter's signatories, said in an interview. "They are making a classic correlation/causation error here," Seay explained. Plenty of other developments could have led to armed groups losing their grip on whatever mines they did control: During the same period, for instance, there was an increased number of U.N. and Congolese army missions fighting rebel groups.

In March 2014, Seay wrote in the *Washington Post* that Enough's founder, John Prendergast, had wrongly attributed the fall of M23, a militia group considered "defeated" by the U.N., in part to the campaign to stop conflict minerals. According to Seay, "M23 never controlled mining areas" in the first place. Similarly, a 2012 report by the International Peace Information Service, an independent Belgian research group on sub-Saharan Africa, found that though M23 had profited from smuggling and taxation of minerals, "establishing full military control over mining areas to maximize profits is not M23's priority for now. As a consequence it has to rely on other means to sustain its war effort." Seay also noted that research actually shows that violence seems to have increased in eastern Congo *after* Dodd-Frank went into effect. She cited research by the AidData Center for Development Policy (ACDP) at the College of William and Mary, which found that "a narrative of increasing violence and diminishing productivity in the DRC's natural resource sector" hints at "a possible correlation between the two."

Critics of Dodd-Frank are very direct: "Despite successes of activists in shaping policy, the conflict minerals campaign fundamentally misunderstands the relationship between minerals and conflict in the eastern DRC," the authors of the September letter wrote. They went on to write, "As a result, the conflict minerals movement has yet to lead to meaningful improvement on the ground, and has had a number of unintended and damaging consequences."

Myth: Dodd-Frank will make life better for Congolese civilians.

Holly Dranginis, a Congo policy analyst at Enough, is confident her group's work is paying off, slowly. Certification required by Dodd-Frank and other related efforts, she said in an interview, will eventually make life "just a lot better for the lowest-level miners."

But for now at least, the law seems to be doing the opposite. When Dodd-Frank passed, Congolese President Joseph Kabila put a ban on all mining and mineral exports in North and South Kivu and Maniema provinces. Though the ban was officially lifted in 2011 after the government supposedly had a chance to put programs into place that could trace where minerals came from, its ripple effects have persisted: Many artisanal mines have remained closed, and countless livelihoods have been destroyed, according to academics and activists. Seay estimated in 2012 that between five and 12 million Congolese had been “inadvertently and directly negatively affected” by the loss of employment created by the ban and its aftershocks. (Mbale lost her job for a period, but was able to find work at a new mine after the ban was lifted.)

As just one example of an aftershock, Malaysia Smelting, one of the world’s largest producers of tin, stopped buying ore from Congo altogether. Like many companies, it feared being labeled a user of conflict minerals and felt it could not determine which were conflict free. (Due diligence under section 1502 is expensive: A 2011 Tulane University study commissioned by U.S. Senator Dick Durbin estimated the implementation cost of 1502 at \$7.93 billion to private companies.) Previously, Malaysia Smelting had purchased more than 80 percent of Congo’s tin, Reuters reported, so the economic loss was dramatic. In May 2011, Bloomberg News reported that sales of tin from North Kivu “fell more than 90 percent” the previous month as a result of companies like Malaysia Smelting pulling out. And indeed, Malaysia Smelting wasn’t alone: According to a March 2014 article in *TechRepublic*, other smelters have also joined in a “de facto boycott” of Congo minerals.

According to the *Washington Post*’s November 2014 investigative report, back before Dodd-Frank passed, miners sold a kilogram of tin for \$7. Today, that number has dropped to just \$4, even though the global market price for the ore has risen. “[T]he loss of American and other Western clients has been keenly felt” in Congo, the newspaper noted.

Donatien Nakalonge of Volunteers for Rural Development, a non-governmental group that works in South Kivu and is known by its French acronym (VODER), has witnessed the impacts of this economic crisis up close. “This law [Dodd-Frank] has taken food out of the mouths of the artisanal miner’s family,” he said in an interview.

In early December, Sasha Lezhnev, a senior policy analyst at Enough, wrote in an email that the legislation’s immediate impact on miners’ livelihoods “is a real and serious problem that must be addressed through more robust initiatives to aid and empower Congolese miners.” He pointed out that Enough has been pushing the U.S. government, as well as metal and tech companies, to contribute to “livelihood funds” for miners, and he said progress is being made through a number of programs: In 2014, the U.S. Agency for International Development began a \$5.8 million Capacity Building for Responsible Minerals Trade project and a \$20 million community recovery project. Unfortunately, Lezhnev also said, \$20 million was allotted for such programs in the Conflict Minerals Trade Act (which was floating around Congress before being nixed in favor of 1502) but “got taken out at the last minute when it was folded into the Dodd-Frank Act.” However, this account is disputed by Didier de Failly, director of a Congolese science and technology research institute, who claims Prendergast told him in 2010 that Enough actually *chose* to support only the regulatory language that became Section 1502. Lezhnev countered by saying Faily “must have misunderstood John” and noting that “Enough had lobbied heavily for the inclusion of livelihoods provisions into the bill.”

Conceivably, corporations buying conflict-free minerals could bring job training to local communities while slowly implementing tracing schemes and other ways by which to extract clean minerals. But there’s only so much any one company can do, and no one I spoke to in eastern Congo said they’ve seen evidence of such programs yet. Meanwhile, Mike Loch, who leads a supply chain corporate responsibility program for Motorola, which sources minerals in Congo, said in an interview, “We’re not looking to subsidize the mining industry; that would not be a sustainable business model. Our role is to lend our brand and reputation to say we’re willing to accept legitimate, verified, conflict-free minerals from the region into our products.”

Myth: Dodd-Frank is being successfully enforced.

If you ask the Enough Project, Dodd-Frank is working. But even the advocacy group admits that companies are struggling with regulating at least one of the minerals named in the law. “Market changes spurred by the 2010 Dodd-Frank law on conflict minerals have helped significantly reduce the involvement of armed groups in eastern Democratic Republic of Congo (“Congo”) in the mines of three out of the four conflict minerals,” Lezhnev and other staffers at the project wrote last June. The fourth, more difficult, mineral they are referring to is gold.

Smuggling remains a huge problem — for gold especially, but also for other minerals. A lot of criticism is aimed at what is known as the “tag and bag” system, which involves tying a small plastic tag around a bag of minerals to certify it as “clean.” According to Radley, “The closer you get to the ground, the more farcical it looks.” In March 2013, for instance, Global Witness discovered that the Congolese military had been running a racket at the Kalimbi cassiterite mine in South Kivu: It was siphoning off ore before it could be bagged and tagged, and selling it through a parallel supply chain for the local colonel’s profit. As a result, two tons of uncertified ore had slipped quietly out of Kalimbi and ended up north, in Goma, the previous December. There have also been cases of mine officials selling tags at \$20, which are then used to label “dirty” tin as “conflict-free,” a local NGO worker named Eric Kajemba told Deutsche Welle in October. “Mine officials only earn \$60 a month, so they are still easy to bribe.”

“Congo is a place where almost every public official is bribable,” Seay said in an interview. “I think there’s a huge level of naïveté about how enforceable this is.”

Smuggling also allows illegal traders to offer a better price by at least 2 percent, according to the U.N. Group of Experts on the Democratic Republic of the Congo, which reports regularly on the situation in Congo, because they don’t have to pay export taxes. The group says that in addition to illegal traders’ fudging weights of smuggled minerals, “the lack of regulation of the trade facilitates fraud at the local, intermediate and regional levels.”

There are other problems with enforceability, too: Minerals can be laundered through places like China or Brazil, making their actual origin unidentifiable — but also allowing them to be deemed clean. Global Witness's Pickles calls this a “kind of a cop-out.”

On-the-ground certification is also cumbersome and slow-moving: In South Kivu alone, out of more than 900 mines, only 11 are tagging minerals at this point as “conflict-free,” Adalbert Murhi Mubalama, the province's minister of mines, told the *Washington Post*. And, at the beginning of September, the U.S. government announced that it “does not have the ability to distinguish” which refiners and smelters outside of Congo are financing sites within the country that are in fact run by militias.

* * *

Some critics are starting to see a revision or repeal of Dodd-Frank as inevitable. Rosa Whitaker, a former negotiator at the World Trade Organization (WTO) and assistant U.S. trade representative for Africa, says that countries that are economically impacted by Dodd-Frank are considering bringing a suit against the United States through the WTO on the grounds that Section 1502 is against its rules of trade. Whitaker added that meddling with such a massive source of income for the decrepit Congolese economy is more than an economic gamble — it is an ethical lapse. “I think a lot of the NGOs really have to examine their own humanity,” she said.

Congolese miners, in the meantime, are caught in a number of liminal states: between no job and a grueling one, and among NGOs trying to help but actually hurting them, companies seeking to make a profit from their labor while navigating international regulations, and a government that largely ignores them.

Radley, echoing other 1502 watchers, said, “I think at the moment [Dodd-Frank has] done more harm than good.” He has hope that it could “do good — 10, 20, 30 years down the line.”

But, he added, “It's going to be a long, painful process.”

Junior D. Kannah/AFP/Getty Images



The New York Times |

The Opinion Pages | OP-ED CONTRIBUTOR

How Congress Devastated Congo

By DAVID ARONSON AUG. 7, 2011

Washington

IT'S a long way from the marble halls of Congress to the ailing mining towns of eastern Congo, but the residents of Nyabibwe and Nzibira know exactly what's to blame for their economic woes.

The "Loi Obama" or Obama Law — as the Dodd-Frank Wall Street reform act of 2010 has become known in the region — includes an obscure provision that requires public companies to indicate what measures they are taking to ensure that minerals in their supply chain don't benefit warlords in conflict-ravaged Congo. The provision came about in no small part because of the work of high-profile advocacy groups like the Enough Project and Global Witness, which have been working for an end to what they call "conflict minerals."

Unfortunately, the Dodd-Frank law has had unintended and devastating consequences, as I saw firsthand on a trip to eastern Congo this summer. The law has brought about a de facto embargo on the minerals mined in the region, including tin, tungsten and the tantalum that is essential for making cellphones.

The smelting companies that used to buy from eastern Congo have stopped. No one wants to be tarred with financing African warlords — especially the glamorous high-tech firms like Apple and Intel that are often the

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http://www.nytimes.com/2011/08/08/opinion/how-congress-devastated-congo.html?_r=0

ultimate buyers of these minerals. It's easier to sidestep Congo than to sort out the complexities of Congolese politics — especially when minerals are readily available from other, safer countries.

For locals, however, the law has been a catastrophe. In South Kivu Province, I heard from scores of artisanal miners and small-scale purchasers, who used to make a few dollars a day digging ore out of mountainsides with hand tools. Paltry as it may seem, this income was a lifeline for people in a region that was devastated by 32 years of misrule under the kleptocracy of Mobutu Sese Seko (when the country was known as Zaire) and that is now just beginning to emerge from over a decade of brutal war and internal strife.

The pastor at one church told me that women were giving birth at home because they couldn't afford the \$20 or so for the maternity clinic. Children are dropping out of school because parents can't pay the fees. Remote mining towns are virtually cut off from the outside world because the planes that once provisioned them no longer land. Most worrying, a crop disease periodically decimates the region's staple, cassava. Villagers who relied on their mining income to buy food when harvests failed are beginning to go hungry.

Meanwhile, the law is benefiting some of the very people it was meant to single out. The chief beneficiary is Gen. Bosco Ntaganda, who is nicknamed The Terminator and is sought by the International Criminal Court. Ostensibly a member of the Congolese Army, he is in fact a freelance killer with his own ethnic Tutsi militia, which provides "security" to traders smuggling minerals across the border to neighboring Rwanda.

All this might be a price worth paying if the law were having its intended effect of economically asphyxiating the warlords who turned eastern Congo into the deadliest conflict zone since World War II. As Representative Barney Frank, the Massachusetts Democrat for whom the act is partly named, memorably put it, "The purpose is to cut off funding to people who kill people."

But by the time President Obama signed the law last summer, the conflict had moved into a different phase. Most of the militias that wreaked havoc between 2003 and 2008 have since been incorporated into the Congolese Army. The two or three of any significance that remain get their money from kidnapping and extortion, not from controlling mining sites or transport routes. The law has not stopped their depredations.

The people of eastern Congo agree that it would be beneficial to bring greater clarity and transparency to the mineral trade. A variety of local and international initiatives to do so were under way when the embargo hit. Those efforts may now become a casualty of the Dodd-Frank law.

The Chinese have recently opened a trading post in North Kivu; they make cellphones as well, and don't feel the need to participate in transparency schemes the way Western companies do. And because they know they're the only market in town, they are buying at a steep discount.

Rarely do local miners, high-level traders, mining companies and civil society leaders agree on an issue. But in eastern Congo, they were unanimous in condemning Dodd-Frank. The Rev. Didier de Failly, a Belgian priest who has lived in Congo for 45 years, insistently warned Western advocacy groups of the dangers posed by their campaign. He told them it was no defense for them to claim that they weren't proposing an embargo, since what they were doing would inevitably lead to one.

But once the advocacy groups succeeded in framing the debate as a contest between themselves and greedy corporate interests, no one bothered to solicit the opinion of local Congolese. As the leader of a civil-society group, Eric Kajemba, asked me, more in confusion than in anger, "If the advocacy groups aren't speaking for the people of eastern Congo, whom are they speaking for?"

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How Congress Devastated Congo - The New York Times

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AN OPEN LETTER

Dear governments, companies, non-governmental organisations, and other stakeholders implicated in efforts of various kinds related to the issue of 'conflict minerals',

In early 2014, two international industry giants – Intel and Apple – issued refined corporate social responsibility policies for minerals sourced in the eastern Democratic Republic of the Congo (DRC). The announcements followed an unprecedented wave of guidelines, law-making, and initiatives over the past few years to 'clean up' the eastern DRC's mining sector, and were met with widespread praise.

Perhaps the most widely publicised of these efforts is US legislation known as Section 1502 of the Dodd-Frank Act, which asks all companies registered on the US stock market to reveal their supply chains to the Securities and Exchange Commission (SEC) when sourcing minerals from the eastern DRC or neighbouring countries. Canada is in the advanced stages of developing similar legislation, and many other countries are looking closely at the issue. The European Union has introduced a voluntary conflict minerals regulation scheme for all member states, and the United Nations (UN) and Organisation for Economic Cooperation and Development (OECD) have developed guidelines on sourcing natural resources in high-risk areas such as the eastern DRC.

These efforts primarily target artisanal (or 'informal') mining in the eastern DRC, due to widespread international recognition that so-called conflict minerals (most notably tin, tantalum, tungsten, and gold) produced by artisanal mining in this part of the world have helped conflict actors generate revenue to finance their operations in the DRC over the past two decades.

The Situation

Despite successes of activists in shaping policy, the conflict minerals campaign fundamentally misunderstands the relationship between minerals and conflict in the eastern DRC. First, while the minerals help perpetuate the conflict, they are not its cause. National and regional political struggles over power and influence as well as issues such as access to land and questions of citizenship and identity are just some of the more structural drivers of conflict. The ability to exploit and profit from minerals is often a means to finance military operations to address these issues, rather than an end in itself. Internal UN assessments, for instance, show that only 8% of the DRC's conflicts are linked to minerals, and specific motivations vary greatly across the vast array of different armed groups.

Second, armed groups are not dependent on mineral revenue for their existence. The eastern DRC is a fully militarised economy, in which minerals are just one resource among many that armed groups – and the national army FARDC – can levy financing from. The M23, until recently the most powerful non-state armed group in DRC, never sought physical control over mining activity.

Moreover, few local stakeholders have been included in on-going international policy-making, and as a result realities on the ground have not always been taken into account. Setting up the required systems and procedures to regularly access and audit thousands of artisanal mining sites in isolated and hard-to-reach locations spread across an area almost twice the size of France would be a challenge for any government. In the eastern DRC, where road infrastructure is poor to non-existent and state capacity desperately low, the enormity of the task is hard to overstate. But in demanding that companies prove the origin of minerals sourced in the eastern DRC or neighbouring countries before systems able to provide such proof have been put in place, conflict minerals activists and resultant legislation – in particular Section 1502 of the Dodd-Frank Act – inadvertently incentivize buyers on the international market to pull out of the region altogether and source their minerals elsewhere.

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The Result

As a result, the conflict minerals movement has yet to lead to meaningful improvement on the ground, and has had a number of unintended and damaging consequences. Nearly four years after the passing of the Dodd-Frank Act, only a small fraction of the hundreds of mining sites in the eastern DRC have been reached by traceability or certification efforts. The rest remain beyond the pale, forced into either illegality or collapse as certain international buyers have responded to the legislation by going 'Congo-free'.

This in turn has driven many miners into the margins of legality (for instance, feeding into smuggling rackets), where armed actors return through the loopholes of transnational regulation. Others have simply lost their jobs, and in areas where mining has ceased, local economies have suffered. To put this in context, an estimated eight to ten million people across the country are dependent on artisanal mining for their livelihood. Some former miners have returned to subsistence agriculture, but persisting insecurity levels leave them in abject poverty facing dire living conditions, in fear of missing harvests due to displacement. Others have been prompted to join militias as a means to quick cash in the absence of other opportunities; a particularly perverse impact, when one considers the intentions of the movement.

Alongside the impact on mining communities and local economies, several armed groups have responded by turning to different businesses such as trading in charcoal, marijuana, palm oil, soap, or consumer goods. Those remaining in the mining sector have largely traded mineral exploitation on site for mineral taxation a few steps down the supply chain, operating numerous roadblocks that can bring in millions of dollars a year. Others are reported to have sent in family members or civilian allies to run business for them on site, while they remain safely at a distance.

For the few mining sites fortunate enough to be reached by Joint Assessment Teams responsible for determining their 'conflict-free' status, these teams have been unable to provide the regular, three-month validation visits envisaged in legislation. There is an additional delay of several months following these visits before the Congolese Ministry of Mines reviews and approves the assessment at the national level. Given the speed at which situations can change in volatile environments, infrequent assessments and lengthy delays raise concerns over the accuracy of certification and the credibility of the system.

More worrying still, multinational corporations such as Apple and Intel are auditing smelters to determine the conflict-free status of the minerals they source, and not the mines themselves. As smelters are located outside of the DRC and audits are not always conducted by third parties, these processes raise further concerns over whether conflict-free certifications reflect production realities.

By far the most advanced site in terms of producing 'conflict-free' minerals for sale to the international market is Kalimbi, a tin mining area home to externally-financed initiatives running an industry-led bagging-and-tagging scheme called iTSCI. Yet even here, despite the establishment of a 'closed pipeline' from mine to exportation, the mine still suffers from the sporadic influence of armed actors, and miners are made to bear the additional costs of 'conflict-free' schemes. This raises further concerns over the credibility of the system in place, and its suitability for the scale-up and expansion to other, more remote mine sites currently underway. Coupled with slow progress in implementation, the trend towards the monopolisation of 'conflict-free' supply chain initiatives, in particular traceability by iTSCI, is economically damaging to local populations since it currently excludes and isolates the overwhelming majority of mining communities from legal access to international markets.

The Alternative

There is broad consensus for the need to clean up the eastern Congo's minerals sector, yet much disagreement about the international community's current model for achieving this goal. As such, efforts to improve transparency in the eastern DRC's mineral supply chains should continue. Yet a more nuanced

and holistic approach that takes into account the realities of the eastern DRC's mining sector and the complexity of the conflict is needed. To this end, we make the following five recommendations:

- **Improve consultation with government and communities:** Congolese government and civil society were poorly consulted on Section 1502 of the Dodd-Frank Act prior to its passing, and as a result many were unaware of its implications. The few who were consulted were unanimously pro-Dodd-Frank, creating additional conflicts on local levels where endorsement and dissent compete. More Congolese voices must be listened to, and the local context and power structures taken into account. This would ensure greater understanding of the local context and better harmonisation with existing national and regional initiatives, such as the International Conference of the Great Lakes Region's (ICGLR) Regional Initiative against the Illegal Exploitation of Natural Resources.
- **Work towards meaningful reform:** The audit process should be designed to improve policies and practices rather than to just provide window-dressing. The dominant belief that static oversight and validation processes ensure 'conflict-free' mineral trade is misplaced given the volatile security situation in most of the eastern DRC. Both mines and smelters should be regularly inspected and the time period between inspection and certification minimized. Where this is not feasible, additional waivers or similar measures should not be ruled out.
- **Create incentives towards better practice:** Legal frameworks must be supported by real projects on the ground that can meet their requirements. If this is not possible – which is clearly still the case today, nearly four years after the passing of Dodd-Frank – then transition periods must be extended and the lowering of excessively high standards for 'conflict-free' minerals should be considered. Similarly, former conflict actors should be incentivised where appropriate to join new 'conflict-free' schemes. This may help avoid the eventual subversion or infiltration of the 'clean' system put in place, as has been seen to date.
- **Promote fair competition:** Regulation must be based on competition that allows not only international businesses but also Congolese producers to influence (i.e. increase) local price schemes. This in turn would encourage a regime that ensures minimum wages which mining cooperatives can guarantee to their members based on their increased leverage on the price fluctuation.
- **Widen the lens:** Root causes of conflict such as land, identity, and political contest in the context of a militarized economy, rather than a single focus on minerals, must be considered by advocates seeking to reduce conflict violence. Furthermore, efforts to eradicate conflict minerals should not overlook the fact that artisanal mining is a key livelihood in the eastern DRC that holds as much potential to help steer the region away from conflict as it does to contribute towards it. More supportive measures are needed – such as those found in the earlier 2009 draft of the US Conflict Minerals Act – that can help capture the economic potential of artisanal mining. Finally, other critical challenges such as access to credit, technical knowledge, hazardous working conditions, and environmental degradation should not be ignored by multinational corporations if they seek to improve business practices and increase transparency in their supply chains.

So far, progress has been made in producing more ethical products for consumers, but stakeholders have not yet proceeded to improve the lives of Congolese people, nor address the negative impact current 'conflict-free' initiatives are having. If the conflict minerals agenda is to lead to positive change on the ground, legislation passed by national governments and steps such as those outlined by Apple or Intel need to be grounded in a more holistic approach that is better tailored to local realities. Failure to do so will continue to seriously limit the ability of conflict minerals initiatives to improve the daily lives of the eastern Congolese and their neighbours. Worse, these initiatives will risk contributing to, rather than alleviating, the very conflicts they set out to address.

List of Signatories

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2. Ann Laudati (Lecturer at the School for Geographical Sciences, University of Bristol)
3. Ashley Leinweber (Assistant Professor of Political Science, Missouri State University)
4. Ben Radley (Researcher, International Institute of Social Studies & 'Obama's Law' Producer)
5. Bonnie Campbell (Professor of Political Science, Université du Québec à Montréal)
6. Christiane Kayser (Independent Analyst & Civil Peace Service-Bread for the World mobile team)
7. Christoph Vogel (Researcher, University of Zurich & Independent analyst/writer)
8. Cyprien Birhingwa (Executive Secretary, COSOC-GL & Coordinator of CENADEP Kivu)
9. Daniel Rothenberg (Professor of Practice, School of Politics and Global Studies, Arizona State University)
10. David Rieff (Independent Author and Commentator)
11. Deo Buuma (Executive Secretary, Action pour la Paix et la Concorde - APC, Bukavu)
12. Didier de Failly s.j. (Directeur, Maison de Mines du Kivu, Bukavu)
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17. Esther Marijnen (Researcher, Institute for European Studies/Vrije Universiteit Brussel)
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20. Ganza Buroko (Cultural Operator & Coordinator of YolôAfrica, Goma)
21. Godefroid Kâ Mana (Professor, ULPGI Goma & UEA Bukavu & Université Kasavubu Boma)
22. Godefroid Muzalia (Professor, Institut Supérieur Pédagogique de Bukavu)
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24. Herbert Weiss (Emeritus Professor of Political Science, City University of New York)
25. James Smith (Associate Professor of Anthropology, University of California/Davis)
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27. John Kanyoni (Independent Consultant and Vice-President of the Congolese Chamber of Mines)
28. Josaphat Musamba (Assistant Professor, Université Simon Kimbangu of Bukavu)
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32. Josue Mukulumanya (President of the South Kivu mining cooperatives board GECOMISKI)
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All the signatories listed express their support to the open letter in its above form but not necessarily approve of accompanying opinion pieces and/or explanatory notes, which remain their respective authors' views.

11/5/2015

Rwanda Has Become World's Largest Coltan Exporter, Reports KT Press -- KIGALI, Rwanda, Dec. 16, 2014 /PRNewswire-USNewswire/ --


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Rwanda Has Become World's Largest Coltan Exporter, Reports KT Press

Dec 16, 2014, 08:27 ET from KT Press (<http://www.prnewswire.com/news/kt+press>)

KIGALI, Rwanda, Dec. 16, 2014 /PRNewswire-USNewswire/ -- Rwanda is now the world's single largest exporter of tantalum mineral known as coltan and the government says that is only a small portion of the country's production capacity.

In 2013, Rwanda exported 2,466,025kgs of tantalum - accounting for 28% of total 8,807,232Kg of tantalum produced globally. Total revenue from the coltan was \$134.5M.

Minerals were exported despite effects of the US Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) that controls the purchase of minerals sourced from the Democratic Republic of Congo (DRC) and its 11 neighbours, including Rwanda.

Countries subjected to DFA law contributed only 23% of global tantalum exports.

Statistics from the Rwanda's central bank or BNR indicate that in 2013 the country earned \$226.2M from minerals.

Disseminated by Winning Strategies Washington, an agent of a foreign principal. Additional information is on file with the Department of Justice.

<http://www.printhis.clickability.com/plcpt?expire=888e=Rwanda+Has+Become+World%27s+Largest+Coltan+Exporter%2C+Reports+KT+Press+--+KIGA...> 1/3

11/5/2015 Rwanda Has Become World's Largest Coltan Exporter, Reports KT Press -- KIGALI, Rwanda, Dec. 16, 2014 /PRNewswire-USNewswire/ --

Evode Imena, State Minister in Charge of Mining said the mining sector targets \$400M from mineral exports by 2017, creating over 600,000 jobs.

Meanwhile, by October 2014, the country had exported 1,931,041kgs of tantalum worth \$87.4M. The central bank says minerals have fetched \$178.1M in the same period.

The mining industry celebrated International Mining Day on December 4 in capital Kigali, under the theme 'Professional Mining as pillar of growth and sustainable development.'

The earnings have dropped largely due to the fall in global tantalum prices although volumes are expected to rise by end of year.

Officials at the Rwanda Development Board (RDB) told KT Press that government has 22 new projects mainly in exploration worth \$110.5 in investment commitments since 2011.

Trade minister Francois Kanimba told *KT Press* that government is engaging banks to provide loan facilities for miners to boost exports. "The banks have been waiting for small-scale miners to have concession contracts and properly conducted turnover-assessments in order to access loans," he said.

In response to the Dodd-Frank legislation, Rwanda has a Minerals Traceability Program where all minerals mined there are tagged from the mine-sites until they are ready to be exported.

Companies sourcing minerals from Rwanda are forced to export only those that are conflict-free.

However, the law has dissuaded potential buyers from purchasing minerals.

"We can't change this Act, but we have been able to adhere to it," the trade minister said.

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Safari Eria, the Operations-Manager of Wolfram Mining Processing Ltd said, "We had already been tagging our minerals...all our minerals are exported with certificates of origin to ensure traceability."

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RWANDA Ministry of Natural Resources (MINIRENA) Ministry of Trade and Industry (MINICOM)		ICGLR REGIONAL CERTIFICATE / CERTIFICAT REGIONAL DE LA CIRGL	
<p>This is to certify that shipment no. _____ Ceci certifie que l'envoi n° _____</p> <p>comprised of designated minerals mined in (country) composée de minéraux désignés extraits au (pays) _____</p> <p>has been mined, traded, and handled in accordance with the requirements of ICGLR (MINIRENA Reg. 002/2012), a été extrait, commercialisé et transporté en accord avec les exigences de la CIRGL (MINIRENA Reg. 002/2012).</p>		<p>Name and address of the exporter/shipper / Nom et adresse de l'exportateur/expéditeur: _____</p> <p>Name and address of the first buyer/ Nom et adresse du premier acheteur: _____</p> <p>Date of shipment/ Date d'expédition: _____</p> <p>Date of expiry of certificate/ Date d'expiration du certificat: _____</p> <p>Transiting through: Transitant par: _____</p>	
<p>Designated mineral(s) Minéraux désignés: _____</p> <p>Contained in (quantity) Mécanisme (kg): _____</p> <p>Grade (%) Teneur (%): _____</p> <p>Est. value (USD) Valeur est. (USD): _____</p>		<p>Name of GMD Officer/ Nom d'agent GMD: _____</p> <p>Signature and stamp/ Signature et cachet: _____</p> <p>Date and location/ Date et lieu: _____</p>	
<p>Name of RSB Officer/ Nom d'agent RSB: _____</p> <p>Signature and stamp/ Signature et cachet: _____</p> <p>Date and location/ Date et lieu: _____</p>		<p>Name of RSB Officer/ Nom d'agent RSB: _____</p> <p>Signature and stamp/ Signature et cachet: _____</p> <p>Date and location/ Date et lieu: _____</p>	

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'Conflict Minerals' Too Hard To Track, Commerce Department Says - The CFO Report - WSJ

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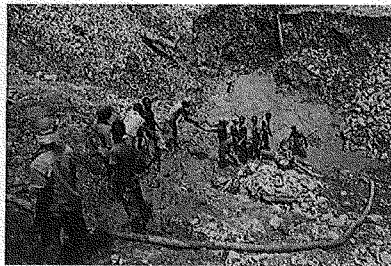
September 5, 2014, 5:57 PM ET

'Conflict Minerals' Too Hard To Track, Commerce Department Says

By Emily Chasan

The U.S. government finally acknowledged Friday it cannot determine which refiners and smelters around the world are financially fueling violence in the war-torn Congo region.

The Commerce Department published a list of more than 400 sites from Australia to Brazil and Canada, but said it "does not have the ability to distinguish" which are being used to fund militia groups.



Reuters

Artisanal gold miners in the Democratic Republic of the Congo

The department missed its original January 2013 deadline, under the 2010 Dodd-Frank Act, to list "all known conflict mineral processing facilities world-wide." In June, the Government Accountability Office blasted the department for the delay, which the Commerce Department has blamed on the time required to track artisanal miners in eastern Congo that smelt small amounts of these metals, and locating guerrilla operations where makeshift smelters process metals to ship overseas.

The vast majority of the sites on the department's list are small operators, although it also includes a handful of larger corporations such as U.S.-based Asarco Inc. and Germany's H.C. Starck Group. Many of the firms on the list have already been certified as conflict-free.

The inconclusive report underscores the challenges faced by hundreds of U.S. public companies that also had to comply with the rule and file reports on their efforts to discover conflict minerals in their supply chains by June 2.

Companies including Intel Corp. and Apple Inc. said they spent years and millions of dollars investigating

<http://blogs.wsj.com/cfo/2014/09/05/conflict-minerals-too-hard-to-track-commerce-department-says/tab/print/>

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'Conflict Minerals' Too Hard To Track, Commerce Department Says - The CFO Report - WSJ

their supply chains to figure out which components might contain gold, tin, tungsten and tantalum from mining operations blamed for funding armed militia groups in the Democratic Republic of the Congo.

The vast majority said they also couldn't be certain, but a dozen companies, including Google Inc., J. Crew Group Inc. and Deere & Co., acknowledged their suppliers may have obtained metals from such mines.

"The Commerce Department is trying to bring clarity to the rule, but as with everything else on this issue, only sows more confusion and deprives businesses of certainty," said Tom Quaadman, vice president of the U.S. Chamber of Commerce's Center for Capital Markets Competitiveness. "At the end of the day, the conflict minerals rule creates the worst outcome—it has not helped lessen the conflicts in the Congo and creates economic harm in the U.S."

Only about 100 smelters have been certified as conflict-free by the Electronic Industry Citizenship Coalition, which has been tracking suppliers for some 200 technology companies since 2008.

"It's been a massive effort," said Julie Schindall, communications director for the trade group. "This whole exercise in mapping the smelters has revealed a lack of knowledge about the metals refining industry."

Gold purchased through the Shanghai Gold Exchange, which includes about 15% to 20% of all gold sold world-wide, is also "untraceable," the Commerce Department said, since the SGE doesn't keep records of where its gold is sourced.

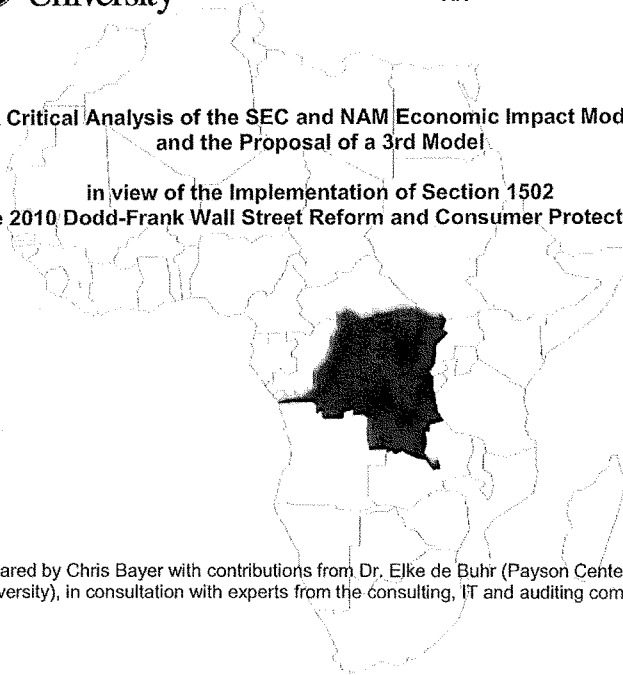
Kimberly S. Johnson contributed to this article.

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**A Critical Analysis of the SEC and NAM Economic Impact Models
and the Proposal of a 3rd Model**
**in view of the Implementation of Section 1502
of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act**



Prepared by Chris Bayer with contributions from Dr. Elke de Buhr (Payson Center/Tulane University), in consultation with experts from the consulting, IT and auditing community.

October 17, 2011

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I. Executive Summary

The Democratic Republic of Congo (DRC) holds vast resources of minerals, and many of the mines are controlled by parties that have perpetrated severe human rights abuses in the region. In an effort to enhance transparency in the minerals supply chain, Section 1502 of the 2010 *Dodd-Frank Wall Street Reform and Consumer Protection Act* mandates company disclosure of the mineral origin contained in their products. Pursuant to the charge of formulating specific regulation, the Securities and Exchange Commission (SEC) is in the process of drafting rules for this provision. A realistic economic impact estimate is important as the careful consideration of the most salient cost drivers informs the precise formulation of rules, which in turn enables implementation.

Our analysis shows that the published figure of \$71.2 million by the SEC underestimates the implementation cost, in part because it does not take into account the range of actors affected by the statutory law. In light of Section 1502, substantial traceability reforms would need to be implemented throughout the supply chain – from the mine to final product manufacturing – in order for disclosure to work.

On the other hand, the NAM estimate of \$9-16 billion overstates these costs by inflating the supplier number and not taking into account significant overlap in supplier/customer relationships, as well as cost efficiencies from existing (and developing) information exchange platforms.

We present a third model focusing on the burden to the affected issuers and their 1st tier suppliers estimating that the actual cost to and of implementing the law is \$7.93 billion. Almost half of the total cost – \$3.4 billion – would be met with in-house company personnel time, and the rest – \$4.5 billion – would comprise outflows to 3rd parties for consulting, IT systems and audits. Comparing the costs to the issuers vs. the suppliers, the bulk of the total costs – \$5.1 billion or 65% – would be incurred by the suppliers (the group not included in SEC's analysis), while the smaller portion of the total – \$2.8 billion or 35% – would be carried by the issuers.

The implementation costs would however be borne by thousands of individual firms in lucrative industries such as the industrial, aerospace, healthcare, automotive, chemicals, electronics/high tech, retail and jewelry industries. Nevertheless, we regard Section 1502 as a "major" rule as its effect on the economy will exceed \$100 million per year.

II. Background

Due to the linkages between mineral extraction and the Second Congo War which has thus far directly and indirectly lead to the deaths of 5.4 million Congolese since 1998,¹ a

¹ Robinson, Simon. *The Deadliest War In The World*. Time Magazine. May 28, 2006.

groundswell of support for conflict-free minerals originating from central Africa emerged in recent years, largely led by civil society organizations such as the Enough Project, Global Witness, Raise Hope for Congo, Conflictminerals.org and Congo Siasa. For years, the mineral extraction sector in eastern Congo has been controlled by militia groups and foreign and domestic military forces, proceeds flowing into the informal market or benefiting neighboring countries rather than effectively translating into revenue which could strengthening the Congolese state and allowing it to assert control over its rich natural resources and the eastern regions of the country. A catch 22.

The US Conflict Minerals Act (Section 1502) in the 2010 *Dodd-Frank Wall Street Reform and Consumer Protection Act* is intended to help put an end to abusive labor practices and conflict in the DRC by requiring US registered companies to disclose whether the minerals they source originate from the DRC or its neighboring countries. In short, the goal of the law is to provide transparency of material origin and allow customers to make purchasing decisions based on that information. Moreover, companies in the mineral and metal sectors are collectively charged with taking responsible measures that identify and respond to risks – and in doing so help mitigate conflict and systemic human rights violations in Central Africa.

The four minerals from DRC mines or adjoining countries defined as “conflict minerals” in Section 1502(e)(4) of the Act are cassiterite (tin), columbite-tantalite² (tantalum) and wolframite (tungsten)³ – also referred to as the “3Ts” and gold. The act furthermore enables the U.S. Secretary of State to designate any other mineral or its derivatives as “conflict minerals” to be financing conflict in the DRC and neighboring countries.

According to figures and estimations compiled by the Enough Project based on sources including the DRC government and the U.S. Geology Survey, the DRC accounts for approximately 15-20% of global tantalum ore production, 6-8% of global tin ore production, 2-4% of global tungsten ore production, and less than 1% of global gold production.⁴ Thousands of manufacturers – ranging from Fortune 500 companies to companies with \$10 million in annual sales – in the industrial, aerospace, healthcare, automotive, chemicals, electronics/high tech, retail and jewelry industries are consumers of these metals, and thus affected by the new law.

Sponsored by Senators Sam Brownback, Russ Feingold, and Dick Durbin as well as Representative McDermott, the intended effect of the legislation is that the public disclosure of mineral chain of custody from extraction to production – and the prospect of steep fines for noncompliance – would discourage companies from supporting the production of “conflict minerals” but rather encourage ethical sourcing. The law however

<http://www.time.com/time/magazine/article/0,9171,1198921,00.html>

² Commonly referred to as “coltan,” a colloquial shorthand for columbite-tantalite, refers to the ore itself rather than a refined product.

³ Tungsten is also produced from another mineral (scheelite), but that ore and the tungsten derived therefrom is not within the scope of the law.

⁴ Enough Project. *A Comprehensive Approach to Congo's Conflict Minerals*. April 2009.

<http://www.enoughproject.org/files/publications/Comprehensive%20Approach%20to%20Congo's%20Conflict%20Minerals.pdf>

does not ban or prohibit the purchase/use of conflict minerals, nor are there any legal penalties for purchasing/using conflict minerals.⁵ There is also no mandate to find or evaluate alternative materials, suppliers or sources.

Recognition for urgently needed action also is expressed by the nation's largest trade association, the National Association of Manufacturers (NAM). In the introduction of the comments submitted to the SEC, NAM states: "We support the underlying goal of Sec. 1502 to address the atrocities occurring in the Democratic Republic of Congo (DRC) and adjoining countries and are actively working with other stakeholders to help address the problem."⁶ General Electric (GE) for example, the diversified industrial conglomerate ranked by Fortune as the 6th largest company in the U.S., is cognizant of the issue: "Recognition of this link between the minerals trade and the financing of armed groups in the DRC has moved companies like GE to identify their use of potential conflict minerals and find ways to sever the link between these minerals and the armed groups."⁷ Many corporations are consequently in the process of devising – some with the help of experts – compliance strategies based on the new law.

Companies however recognize that individual corporate action – in the absence of collective action – will not suffice. As Motorola, the co-chair of the Electronics Industry Citizenship Coalition (EICC) - Global e-Sustainability Initiative (GeSI), stated: "If the goal is to stop the flow of money to illegal armed groups then, like stopping the flow of water in a river, the dam must be built all the way across."⁸ GE agrees, positing that "companies with overlapping supply chains have greater influence over their suppliers when acting together, enabling them to encourage greater transparency and action."⁹

Even the DRC, arguably the biggest stakeholder in the matter, has appealed to the SEC to craft regulation that follows due-diligence guidance developed by the United Nations and the OECD, and to prevent the rules from causing a "*de-facto* embargo" on trade from the Central African nation.¹⁰

⁵ Section 1502(c) requires the Secretary of State, in conjunction with USAID, to develop "a strategy to address the linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products," which includes "A description of punitive measures that could be taken against individuals or entities whose commercial activities are supporting armed groups and human rights violations in the Democratic Republic of the Congo." As yet, no information has been made available concerning the punitive measures.

⁶ National Association of Manufacturers (NAM). *Comments submitted to the SEC*. March 2, 2011. <http://www.sec.gov/comments/s7-40-10/s74010-212.pdf>

⁷ General Electric. *Conflict Minerals and the Democratic Republic of Congo: Expanding Supply Chain Efforts*. August 24, 2011. <http://www.gecitizenship.com/conflict-minerals-and-the-democratic-republic-of-congo/>

⁸ Enough Project. *Getting to Conflict Free*. December 2010. http://www.enoughproject.org/files/publications/corporate_action-1.pdf

⁹ Ibid.

¹⁰ Kavanagh, Michael. *Congo Government Asks U.S. to Use OECD Guidance for Conflict-Mineral Rules*. Bloomberg. July 28, 2011. <http://www.bloomberg.com/news/2011-07-28/congo-government-asks-u-s-to-use-oecd-guidance-for-conflict-mineral-rules.html>

At the heart of the debate is the extent of the economic cost impact and how best to structure the regulations such that objectives are met without placing undue burden on actors who seek to conform to the law. While the SEC estimates that the cost to the affected companies would come to \$71.2 million, the National Association of Manufacturers (NAM) "believes that the proposed rule is a significant rulemaking and will cost U.S. industry between \$9-16 billion to implement."¹¹ Part of the reason for this discrepancy is the general ambiguity in the current language of Section 1502 – which lends itself to a host of interpretations. Perhaps the biggest reason for the discrepancy between models is the question how many actors are affected by the new rules. While the SEC considers 20% of the 5,994 publicly traded companies will be required to implement all aspects of the law – an estimated 1,199 actors – it has not taken into consideration the number of privately held and supplier companies affected. NAM on the other hand claims that on average there are 2,000 suppliers to each issuer – theoretically 5,994 companies – and therefore close to 12 million companies could be affected.¹² As another example, the SEC and NAM are applying differing operational definitions of what constitutes relevant due diligence and what constitutes "audits."

Currently, the SEC is drafting the "rules" for this provision which will clarify how companies should concretely implement the law. The challenge is how to mandate in favor of principles of transparency and accountability in the value chains that source minerals from the Congo and surrounding countries, however without excessively burdening the private sector actors and driving smaller enterprises out of business.

III. Objective of White Paper

On September 26, 2011, faculty members Dr. Elke de Buhr and Dr. Laura Haas at Tulane University's Payson Center for International Development were contacted by Jessica Simon of Senator Durbin's office with a specific request for help in providing a detailed estimate of what it would cost companies to implement the Congo Conflict Mineral Act. This request was met by a Tulane team agreeing to prepare this paper.

At the heart of the debate is how the SEC should calibrate regulation that implements the law in a manner consistent with the goals of the legislation without needlessly burdening industry and undermining American competitiveness.

The various possible regulation formulations function as parameters to determine the act's economic impact. This paper analyzes and critiques both the SEC and NAM economic impact models – as both models contain significant shortcomings – and proposes a more accurate 3rd model. By honing in on the main deliverables under Dodd-Frank, focusing on actual costs, assigning fair valuations, and basing the extrapolation to

¹¹ National Association of Manufacturers (NAM). *Comments submitted to the SEC*. March 2, 2011. <http://www.sec.gov/comments/s7-40-10/s74010-212.pdf>

¹² as for example per NAM's calculation on page 24 of their March 2011 comments to the SEC.

the macro-level on the best available figures, this model may help shed light on central issues at the heart of the discussion and inform the crafting of practicable regulation.

IV. Analysis of the SEC Economic Impact Model

A. Issue #1: Affected companies

SEC estimated that 1,199 companies will require a full Conflict Minerals Report (CMR). The method the SEC employed to derive this figure, as explained in its proposed rules,¹³ was to find the amount of tantalum produced by the DRC in comparison to global production (15% – 20%), then select the higher figure, 20%, and multiply that by the total number of affected issuers, which they stated is 5,994.¹⁴ By reasoning that since an estimated 20% of all minerals in question originate from the DRC, therefore only 20% of companies – 1,199 – would be affected by the new rules, the SEC committed a *non-sequitur*. For two principal reasons:

1) Conflict minerals are as omnipresent as the ballpoint pen – and that is not just a metaphor. Tungsten, particularly resistant to deforming, is used to manufacture the ball in the ballpoint pen. Metals such as tin and tantalum are ubiquitous in products such as electronics, medical devices, tools, canned goods, automobiles and jet engines/turbines, and many alloys contain only small percentages of minerals in their total composition. Specific recipes of various metal powders are turned into an array of products used in such things as computer motherboards, capacitors and carbides for example. It is therefore much more plausible, as the NAM has stated, that in fact the bulk of the 5,994 publicly-traded companies will be affected. IPC,¹⁵ agreeing with NAM, characterizes the SEC figure as based on “a flawed assumption because 1) the minerals supplied by the DRC may be distributed such that they account for 20% of the supply for 100% of users, and 2) the vast majority of users will be unable to identify the origin of their conflict minerals, especially until more viable audit and tracking systems are in place, and therefore will need to complete a CMR.” IPC concludes that it expects “that nearly 100% of affected issuers will need to complete a CMR, especially in the initial years of the regulation.”¹⁶ This is supported by NAM as they pointed out that the proposed regulation requires a CMR even for issuers who – after reasonable inquiry – are unable to determine the origin of their materials.¹⁷ In short, a more realistic assessment yields that the bulk of U.S. based issuers, 5,994 would be required to complete the full CMR – a figure which becomes important as it comprises the denominator of affected companies with which to calculate the full cost implications.

¹³ Fed. Reg. 80948 et. seq. (Dec. 23, 2010)

¹⁴ 75 Fed. Reg. 80966

¹⁵ IPC is an industry association within the electronics industry. IPC also conducted research into the economic impact of the proposal on its membership and submitted comments to SEC.

¹⁶ SEC also recognizes that first year implementation costs will be higher. 75. Fed. Reg 80966.

¹⁷ See NAM comments, p. 25 and 75 Fed. Reg. 80958.

2) SEC made no estimate of the impact of the rule on suppliers or privately-held companies in issuers' supply chains. Even while privately-held companies are not subject to SEC's filing requirements or the focus of the current law, they will however be requested by their customers – the issuers – to undertake due diligence in order for the issuers to provide the information necessary to meet their SEC obligations under the conflict minerals law. According to the law firm Dykema Gossett, the CM requirements “will have a significant impact on countless U.S. suppliers of automotive, consumer and other products that use certain common minerals in their products, including suppliers who themselves are not publicly traded companies.”¹⁸ NAM put it like this in comments submitted to the SEC: “While the new reporting mandate only applies to companies required to report to the SEC, we expect these requirements will rapidly be passed through the entire supply chain. The requirements will effectively force suppliers not subject to SEC reporting to maintain extensive records of their source materials...” On a similar note, IPC's study stated: “privately held companies, which represented two thirds of respondents, anticipated being impacted by the requirements of the rule despite not being directly regulated.”¹⁹ This paper estimates the number of affected suppliers in Section V.B. Issue #2.

B. Issue #2: Lack of materiality threshold clause

In its proposed rules for conflict minerals, the SEC states that it does not propose “to include a materiality threshold for the disclosure or reporting requirements in our proposed rules.” NAM, in its corresponding comments, however argues that a “*de minimis* standard is not a loophole or exemption, and, if properly designed, it will not materially decrease efforts to increase supply chain transparency. Rather, it would allow the SEC and issuers to focus on the products containing a significant amount of the conflict minerals in a manner that will change supply chain behavior. It thus avoids a very high cost and burden associated with tracing miniscule amounts of materials with little corresponding effect on ameliorating the DRC-region atrocities.”²⁰ We agree. A materiality threshold would reduce the number of companies who would unduly be burdened to implement programs and incur undue costs, and more appropriately place the burden on companies with the largest consumption and so provide an opportunity for the biggest cost/benefit. Although such a threshold is not reflected in the language of the law, it would be appropriate and beneficial for SEC to establish one, eliminating costs and efforts where they are not truly justified.

Setting a very low *de minimus* threshold would effectively rule out free-riding – a situation which would undermine the efforts of all other companies complying with the law. We therefore agree with NAM's fairly reasonable suggestion, “that the conflict minerals must trigger a threshold content value of 0.1 percent or greater of the part or component.”

¹⁸ Paul M. Laurenza, Sheryl L. Toby and Ronald L. Rose. Conflict Minerals Act will have widespread impact on global supply chain. Dykema Gossett PLLC. April 27, 2011.

<http://www.lexology.com/library/detail.aspx?g=688bf426-82b4-43a9-b45e-292de61d554a>

¹⁹ IPC Comments on SEC Proposed Rule on Conflict Minerals, March 2, 2011, p. 20

<http://www.sec.gov/comments/s7-40-10/s74010-131.pdf>

²⁰ NAM Comments. p. 20

However, we do suggest that the term "part or component" be clearly defined, as well as whether the 0.1 percent refers to "percent by weight" or "percent by volume."

C. Issue #3: Recycled/scrap materials

The SEC proposal formulated amendments such that recycled or scrap minerals would be partially exempted from the due diligence and CMR requirements. It reasons that if a "conflict mineral was obtained from recycled or scrap minerals, that mineral would be considered DRC conflict free. This approach for recycled or scrap minerals is not included in the Conflict Minerals Provision, but we believe it is appropriate because such conflict minerals would not be implicating the concerns that prompted the enactment of this statutory provision."²¹

We agree with the SEC. In its comments to the SEC, NAM also emphasized that "treating recycled materials as 'conflict full' intrinsically does not make sense."²² This is truly justified as recycled materials are fundamentally not equivalent to newly mined ore in the context of the law or as a conflict funding source. Many companies impacted by this are scrap companies which are overwhelmingly small, privately-held companies in a highly fragmented industry. Industry anticipates that SEC's final regulations will provide a substantive exclusion for scrap materials. Although such an exemption is not reflected in the language of the statutory law, it would be reasonable and beneficial for SEC to establish such an amendment, appropriately eliminating extraneous cost and effort. However, we point out that a specific and consistently-applied definition of the term "recycled" and "scrap material" is necessary.

D. Issue #4: Indeterminate origin

NAM's request for allowing an "indeterminate origin" exception to be in effect over a transition period is valid as the necessary documentation with which to determine origin may just not exist, especially in the first year of the rule's implementation. The IPC survey of companies within the electronics industry found that on average 18% of their companies could not determine the origin of their minerals / metals.²³ In the absence of operational rules for Section 1502, and such rules having yet to be implemented, gaps do exist in traceability documentation or chain-of-custody documentation for pertinent minerals and metals. Such concerns are furthermore valid in the case of recycled (or scrap) material, where oftentimes there is no paper trail.

While it therefore may be most appropriate to allow such a "indeterminate origin" status over an initial transition period, it should however be backed up with a 3rd party audit to

²¹ 75 Fed. Reg. 80963.

²² NAM Comments, p. 22

²³ Results of an IPC Survey on the Impact of U.S. Conflict Minerals Reporting Requirements, February 2011

verify the veracity of the management system the company relied on to come to the determination. A robust oversight mechanism, heavily policed through audits, would comprise a disincentive to use it. A \$25,000 to \$100,000 charge to have an audit performed – with the uncertainty of what the audit determination would be – is not a prospect any company would take lightly. In short, an “indeterminate origin” provision in effect only for a transitional period which, if invoked by a company would incur an audit, would not constitute a loophole.

E. Issue #5: Phase-in

The provision of a phase-in period for the rules, to be finalized by the SEC within 2011, makes sense for multiple reasons. From a management and disclosure perspective, considerable time and effort will be required to establish, on a company level, the management systems, render them operational, and commission the audits and prepare the related reports and SEC forms. NAM argues that transition rules apply for an implementation period which “is needed for the disclosure requirements, for inventory already at smelters, for products made from existing inventories, and for acquisitions.”²⁴ We agree with NAM that at least a year would be needed before issuers may be able to provide conflict minerals disclosures. Conversely, if the entire industry was jolted by the rules going into effect immediately without a transition phase, and the required time to build systems and align procedures was not permitted, the *de facto* embargo against the minerals of the Central African region, against which NAM cautions, could become entrenched. Since April 2011, owing to the decision of EICC companies to stop sourcing from the DRC if the material is not fully traceable, a *de facto* embargo on Congolese-sources minerals is currently in effect.

F. Issue #6: USDS endorsement of the OECD Guidelines

Section 1502 instructs the SEC, in consultation with the Department of State (USDS), to promulgate regulations requiring, in part, certain companies to submit annually a description of the measures taken to exercise due diligence on the source and chain of custody of the four “conflict minerals.” As of July 2011, the U.S. State Department endorsed *The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* – a guide which provides recommendations for global responsible supply chains of minerals and helps companies to respect human rights and avoid contributing to conflict through their mineral or metal purchasing decisions and practices. “*The Department specifically endorses the guidance issued by the Organization for Economic Cooperation and Development (OECD) and encourages companies to draw upon this guidance as they establish their due diligence practices. We encourage companies, whether or not they are subject to the Section 1502 disclosure requirement, that are within the supply chain of these minerals to exercise due diligence based on the OECD guidance and framework as a means of responding to*

²⁴ NAM Comments, p. 15

requests from subject suppliers and customers.”²⁵ Furthermore, according to IPC, “it is anticipated that the U.S. Securities and Exchange Commission (SEC) may base regulatory compliance with the Dodd-Frank conflict minerals laws on the OECD guidance.”

While the OECD guidelines advance the concept of progressive due diligence principles and improvement of mining circumstances in the central African region, some aspects of the scope of the due diligence process and audits have been critiqued as presenting significant issues and potential inconsistencies with SEC auditor standards.²⁶ The “final” OECD guidelines (issued by the Organization as *Final* in May 2011), are now being tested by 50 companies globally in a real world setting, in participation with the IPC and six IPC-member companies, through a “pilot evaluation program to review and refine the (OECD) due diligence guidance for conflict minerals.”²⁷ This pilot, sponsored by the OECD itself, is considered by some to be an acknowledgement by the Organization that the framework at this stage remains more theoretical than pragmatic.²⁸ This pilot study is therefore vitally important for all industries impacted by CM rules: having streamlined and actionable due diligence rules is vital for the prospect of their being implemented.

However, the timing of OECD’s guidelines testing – scheduled to be completed in June 2012 (which arguably should have been completed *prior to* the Organization’s issuance of their “final” version) – is not aligned with the SEC’s final rulemaking schedule.²⁹ Precisely because the SEC and USDS have both directly stated their support for, and clear intention to rely upon, the OECD Guidelines, we caution that without careful consideration of consistency with US standards, liabilities and deadlines, compliance risks and additional latent penalties/costs may be created for industry.

V. Analysis of the NAM Economic Impact Model

As stated in its comments to the SEC, “NAM believes that the proposed rule is a significant rulemaking and will cost U.S. industry between \$9-16 billion to implement.”³⁰

²⁵ USDS. *Statement Concerning Implementation of Section 1502 of the Dodd-Frank Legislation Concerning Conflict Minerals Due Diligence*. July 15, 2011.

<http://www.state.gov/e/eeb/diamonds/docs/168632.htm>

²⁶ NAM Comments, p. 14; The Elm Consulting Group International LLC, *OECD to SEC: Make us the Conflict Minerals Due Diligence/Audit Standard for the US*. July 7, 2011.

<http://elmconsultinggroup.wordpress.com/2011/07/07/oecd-to-sec-make-us-the-conflict-minerals-due-diligenceaudit-standard-for-the-us/>

²⁷ IPC. *IPC Invited to Participate in Pilot Evaluation of OECD Conflict Minerals Due Diligence Guide - Six Member Companies Join Pilot Implementation*. September 2, 2011.

<http://www.ipc.org/ContentPage.aspx?pageid=IPC-Invited-to-Participate-in-Pilot-Evaluation-of-OECD-Conflict-Minerals-Due-Diligence-Guide>

²⁸ The Elm Consulting Group International LLC, *OECD Backs Up A Step on Conflict Minerals Guidance*. September 8, 2011. <http://elmconsultinggroup.wordpress.com/2011/09/08/oecd-backs-up-a-step/>

²⁹ The first meeting by OECD to discuss the status of the pilot is scheduled for late November 2011.

³⁰ NAM Comments, p. 2

To determine whether this figure comprises a fair estimate, this paper will itemize the primary cost drivers and establish whether the cost per unit estimate is reasonable.

A. Issue #1: Not all issuers are created equal

While NAM acknowledges throughout their comments that companies of different sizes will be impacted by the rule, their economic impact analysis did little to identify the differences. To be fair, neither did SEC. As neither SEC nor NAM provided information or guidance on important statistics related to the 5,994 issuers, we refer to the 2011 IPC survey of the impact of the rule on their membership, which was reportedly “balanced in terms of representation by companies of various sizes based on annual sales.” The survey sample was comprised of 32% small companies (under \$10 million in sales), 40% medium-sized companies (in the \$10 million to \$99 million range), and 28% large companies (more than \$100 million in sales). Therefore, the following assumptions and estimates are used throughout this paper relative to the 5,994 potentially impacted issuers:

- We consider annual revenues of \$100 million as the threshold value between “small” and “large” companies.
- Using that revenue threshold – and in the absence of any other authoritative, relevant and credible information – we accept the IPC study benchmarks of 72% small/medium companies and 28% large companies.³¹

B. Issue #2: Number of 1st tier suppliers

A central issue in the discussion of economic impact is the number of suppliers to every issuer. Using NAM’s estimate of an average 2,000 direct (or “1st tier”) suppliers to each issuer, of which there are 5,994, the total number of suppliers comes to 12,000,000. The question that arises at this point: is 12 million a realistic estimate of the number of 1st tier suppliers furnishing 5,994 issuers with 3T and gold?

NAM’s attempt at developing 1st tier supplier estimates is laudable, but misses three critical factors:

1. Supplier overlap/mutuality: A supplier is almost certain to have multiple customers that are issuers, therefore the issuer/supplier connectivity is more complex than a simple 1-to-1 relationship. The 12 million figured implied by the NAM calculation may be reflective of the total number of *business relationships* (i.e., material supply contracts), but we argue that is different from the number of *unique businesses* that must deploy conflict minerals programs. A supplier with multiple customers will not have to expend 100% of CM program development costs

³¹ Results of an IPC Survey on the Impact of U.S. Conflict Minerals Reporting Requirements, February 2011 p. 3

repetitively for each of its customers as implied by NAM's straightforward multiplication calculation. This concept is explained below in detail.

2. Exclusion of suppliers that do not provide CM materials, parts or components:
NAM's estimates assume that 100% of an issuer's 1st tier suppliers will be required to "make substantial changes to their corporate compliance policies and supply chain operating procedures."³² However, such changes are, in reality, only required for suppliers who provide materials, parts or components that are identified as having 3T and gold.³³ Suppliers of such things as services, paper/wood products, fossil fuels, many polymers/plastics/gasses/chemicals and raw textiles (to name but a few) will not need to change their corporate management systems to address the CM requirements.
3. Smaller companies have fewer suppliers: NAM's estimate of 2,000 1st tier suppliers is not likely to be representative of small companies. We believe that a better estimation of the supplier-customer ratio for small companies is the IPC 2011 survey of its members in the electronics supply chain. This is explained in more detail below.

C. Issue #3: Cost of performing internal due diligence reform

In order to evaluate NAM's analysis on due diligence efforts, a framework is necessary. In its 2011 Guidelines, OECD defines due diligence as "as the process through which enterprises can identify, prevent, mitigate and account for how they address their actual and potential adverse impacts as an integral part of business decision-making and risk management systems."³⁴ OECD's framework for risk-based due diligence in the conflict mineral supply chain involves five principal steps:³⁵

- Establish strong company management systems
- Identify and assess risks in the supply chain
- Design and implement a strategy to respond to identified risks
- Carry out independent third-party audit
- Report on supply chain due diligence

The discussion in this section addresses the first three steps within the full due diligence process concerning company-specific policies and procedures that are carried out

³² NAM Comments, p. 24

³³ Non CM suppliers may have to undertake some level of minimal effort to affirmatively prove the absence of CM in the items they manufacture/sell. However, once this is proven, those suppliers will not have to implement internal management systems specific to non-existent CM.

³⁴ OECD. *OECD Guidelines for Multinational Enterprises*. 25 May 2011.
<http://www.oecd.org/dataoecd/43/29/48004323.pdf>

³⁵ OECD. *Recommendation of the Council on Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*. 25 May 2011. C/MIN(2011)12/FINAL.
<http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=268&InstrumentPID=272&Lang=en&Book=False>

internally within a company. The audit and reporting steps are discussed in a separate section within this analysis.

NAM estimates the cost of changing the corporate compliance policies and supply chain operating procedures to be \$1.2 billion, which was calculated as "2 hours x \$50 per hour x 2,000 suppliers x 5,994 companies." NAM affirms that within a CM due diligence process, "reliable due diligence" must go hand-in-hand with a "commercially practicable effort" with regard to the expected and actual level of effort to be undertaken.³⁶ Yet NAM's estimate for the issuing companies' that "at a minimum that two hours of employee time at \$50 per hour will be required to change legal obligations to reflect a company's new due diligence" is, in our estimation, understated for the following reasons:

1. Incorrect level of effort: two hours to review and revise of wide range of internal policies – from the supplier code of conduct to business practices, from contingency planning to quality assurance – is not enough time. Based on information available from various experts in the industry (as well as our own experiences in other sectors/studies), we believe that if the matter were approached from a management system perspective, this activity involves multiple tasks, including:

- initial reviews of the current policies/procedures/controls (to locate where/which policies, departments and functions will be impacted);³⁷
- developing a gap analysis and compliance plan (identifying what specific modifications are needed for the affected policies/procedures/controls);
- developing draft revised policies/procedures/controls;
- conducting initial testing on those revised policies/procedures/controls to determine if they function correctly in a desktop test setting; and
- implementing them as final, including training of personnel as well as communication to suppliers.

The effort we envision may take multiple people several weeks for a large company with complex business management systems and controls. For small companies it may take one person a full week (40 hours). For large companies affected, we estimate an average of 100 man-hours would be required. In addition, this process may be facilitated by 3rd party, which would entail consultancy fees. We estimate consultancy fees at \$200 per hour³⁸ and expect that large companies will employ consultants less than small companies will. We estimate that approximately one-quarter of the total man-hours for small companies will involve consultants, while that number may be 10% for large

³⁶ NAM Comments, p. 13-14

³⁷ In our view, this step includes the identification, review and analysis of internal risk assessment programs for vendors and related information. We believe it is appropriate to include that element within an overall management system review rather than breaking it out as a separate step as NAM suggests.

³⁸ SEC used a cost of \$400 per hour which generally reflects the rates for Big 4 accounting firms. Although we anticipate that some of this work will be performed by the Big 4 accounting firms, a substantial portion of required consulting work will also be carried out by lower cost environmental and sustainability consulting firms hired for these projects. We thus estimate that the average consultancy charge would be \$200.

companies. These estimates are aligned with SEC's estimates for consultancy support for the 10-K, 20-F and 40-F forms.³⁹

2. *Supplier overlap / mutuality:* NAM did not address the concept of *supplier overlap / mutuality*, accounting for the fact that issuers have some (and sometimes many) suppliers in common. We believe there is substantial overlap/mutuality in the relevant business relationships; therefore, once a supplier modifies their management systems to satisfy the CM requirements for one customer, that supplier will not need to wholly replicate those CM program development efforts/costs again for other customers (see *Figure 1* below). Changes to the management system will most likely be addressed at the supplier's corporate or divisional level. Once established, that management system framework functions the same to serve the needs of all issuers who are that supplier's customer.⁴⁰ This creates "overlap" or "mutuality" cost efficiencies not recognized in the NAM model. NAM's methodology multiplying 5,994 by 2,000 incorrectly assumes that separate/unique policy/procedure changes will be required on the part of each supplier to support each individual issuer. That calculus is more determinative of the number of contractual supplier relationships, a concept that is different from the number of unique businesses within the supply chain. We recognize there may be slight differences in information demands on suppliers by various issuers, but we believe those differences will be minor and 100% cost redundancy is not justified.

Figure 1:

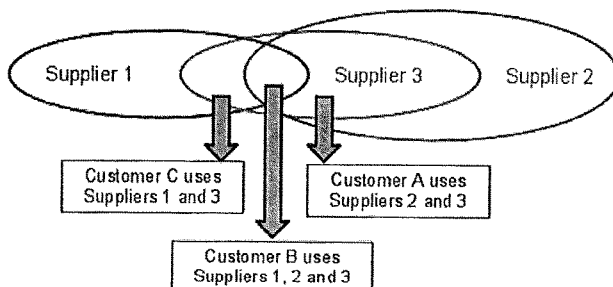


FIGURE 1: Areas of shape overlap illustrate where customers have relationships with multiple suppliers, therefore creating *supplier overlap/mutuality*.

The mineral smelters for example represent obvious choke points at which to differentiate chain of custody tracking and internal controls over the mineral supply chain. CM users can take advantage of the smelters' position in the supply chain. If smelters

³⁹ 75 Ref. Reg. 80966.

⁴⁰ This has been proven over the past 20 years for management systems developed by companies under international standards (ISO) for quality programs (ISO9001), environmental management (ISO14001), occupational health and safety (OHSAS18001) and more recently by the management systems implemented for the EU RoHS compliance.

are verified as not having or purchasing DRC-sourced materials that contribute to conflict, that information can be distributed up the smelter's supply chain, which is the intent and theory of the EICC Conflict Free Smelter (CFS) program.⁴¹ Furthermore, the CFS information is made available to other companies and the general public for free, which eliminates costs at other points in the supply chain. There are currently 19 tantalum smelters, 45 Tin smelters, 13 Tungsten smelters and 61 Gold smelters that have enrolled to participate in the CFS program.⁴²

3. Not all 1st tier suppliers require CM management systems: CM management programs are only required for suppliers dealing in materials, parts or components that contain 3T or gold. Many suppliers in each tier furnish products unrelated to minerals (e.g., service vendors, suppliers of paper products, fossil fuels, and raw textiles to name but a few). As only a portion of the NAM-estimated 2,000 1st tier suppliers fall under the mineral / metal category, one must therefore employ a correction factor take into account only those suppliers with relevant materials/products. NAM did not however provide data on what percentage that may be. Therefore, in the absence of other credible, relevant and authoritative data, we rely on data from the IPC study,⁴³ summarized in *Table 1* below:

Table 1:

<i>Respondent Industry</i>	<i>Percentage of supply base known to NOT contain the metals</i>	<i>Percentage of supply base known to contain the metals</i>	<i>Percentage of supply base with unknown status</i>
Electronic Manufacturing Services (EMS)	24	38	38
Printed Circuit Board (PCB) Manufacturers	85	7	8
Materials Industry	49	51	0
Equipment Industry Suppliers	27	47	26
<i>Average</i>	<i>46.25</i>	<i>35.75</i>	<i>18</i>

Given that SEC's proposed rules requires the same level of effort for unknown sources as for DRC-source materials, we combined the percentages in the last two columns to

⁴¹ The most recent update of the CFS list (May 31, 2011) indicates only 3 companies (limited to tantalum) have been cleared as "compliant" by EICC. The CFS Program Status Update (<http://www.conflictfreesmelter.org/CFSandDueDiligenceProgramStatusUpdate.htm>) states that as of September 30, 2011, 12 tantalum companies have been assessed, and only 6 have been deemed "compliant". As of October 15, 2011, there are no compliant smelters for tin, tungsten or gold. <http://www.conflictfreesmelter.org/cfshome.htm>

⁴² EICC-GeSI. CFS and Due Diligence Program Status Update. September 30, 2011. <http://www.conflictfreesmelter.org/CFSandDueDiligenceProgramStatusUpdate.htm>

⁴³ Results of an IPC Survey on the Impact of U.S. Conflict Minerals Reporting Requirements, February 2011 p. 5-6

obtain an estimated percent 53% (35% + 18%) of suppliers that deal in minerals and metals that would be subject to CM requirements. Therefore, we estimate that only 53% of the NAM-estimated 2,000 1st tier suppliers (1,060) provide materials, parts or components that contain 3T or gold and would thus be subject to CM management program efforts/costs. However, for complete clarity, it is our opinion that this is actually the number of material supply contracts involved, not the number of unique businesses.

4. Many issuers have fewer 1st tier suppliers: NAM's estimate of 2,000 1st tier suppliers (along with our corrected estimate of 1,060 material supply contracts) is not likely representative of small companies as we have defined that term. We believe that a better estimation of the supplier-customer ratio for small companies is the IPC 2011 survey of its members in the electronics supply chain. Respondents in the IPC survey had a median of 163 direct suppliers.⁴⁴ As with large issuer suppliers, only a portion of the 163 direct suppliers deal in CM materials, parts and components. Applying the same factor as above (53%), the estimated number of 1st tier suppliers who (a) serve small issuers and (b) are expected to need CM management program efforts/costs is 86. Again, we clarify our opinion is that this is actually the number of material supply contracts involved, not the number of unique businesses.

Issuers:

Using the definition of small and large stipulated in Section V.A. *Issue #1*, the calculations below are bifurcated into 72% small issuers (using 40 hours of effort) and 28% large issuers (using 100 hours of effort). To reiterate other assumptions, we believe external consulting will be used for 25% of the labor for small companies, 10% for large companies, and a billing rate of \$200 per hour based on the variety of consultancies that will be hired.

i. Internal (small companies):

5,994 issuers x 72% x (40 man-hours x 75% of total work load) x \$50/hr = \$6,473,520
(internal labor costs)

ii. Internal (large companies):

5,994 issuers x 28% x (100 man-hours x 90% of total work load) x \$50/hr = \$7,552,440
(internal labor costs)

iii. Consultant (small companies):

5,994 issuers x 72% x (40 man-hours x 25% of total work load) x \$200/hr = \$8,631,360
(consultant costs)

iv. Consultant (large companies):

5,994 issuers x 28% x (100 man-hours x 10% of total work load) x \$200/hr = \$3,356,640
(consultant costs)

Thus, the total estimated cost for 5,994 issuers is \$26,013,960.

⁴⁴ IPC Comments on SEC Proposed Rule on Conflict Minerals, March 2, 2011, p. 20
<http://www.sec.gov/comments/s7-40-10/s74010-131.pdf>

Suppliers:

To determine the additional impact on the supplier base to those 5,994 issuers, we employ a supplier-issuer overlap factor of 60%. This factor attempts to differentiate – and correct for – the number of estimated material supply contracts within the scope versus the number of unique businesses impacted. A 60% overlap factor means that the efforts are *reduced* by 60%, and only 40% of the effort/cost is required. Since NAM, SEC and IPC did not provide data on the amount of supplier overlap/mutuality, we based on our estimation that in general there is likely to be greater than a 50% customer overlap/mutuality throughout the supply chain, we chose 60% as a conservative overlap factor.

We furthermore factor in the size of the company employing the same benchmarks for “small” and “large” companies used for issuers as stipulated in Section V.A. *Issue# 1* – an important variable not taken into account in the SEC and NAM models. The calculations below are bifurcated into 72% small companies (using 40 hours of effort) and 28% large companies (using 100 hours of effort).

In order to estimate the number of suppliers, we multiply the issuers by the company size factor (large or small), and multiply the number of relevant 1st tier supplier contracts by the overlap factor.⁴⁵ Our estimate of total suppliers is 860,066, comprised of 148,459 small company and 711,607 big company suppliers.

The calculation estimating the cost of strengthening internal management systems in view of performing due diligence is therefore:

i. Internal (suppliers that are *small* companies):

Suppliers (small companies) = (5,994 issuers x 72%) x (86 relevant 1st tier supplier contracts x .4 overlap factor) = 148,459

Internal labor costs = 148,459 suppliers (small companies) x (40 man-hours x 75% of total work load) x \$50/hr = \$222,688,500

ii. Internal (suppliers that are *large* companies):

Suppliers (large companies) = (5,994 issuers x 28%) x (1060 relevant 1st tier supplier contracts x .4 overlap factor) = 711,607

Internal labor costs = 711,607 suppliers (large companies) x (100 man-hours x 90% of total work load) x \$50/hr = \$3,202,231,500

iii. Consultant (for suppliers that are small companies):

Consultant costs = 148,459 suppliers (small companies) x (40 man-hours x 25% of total work load) x \$200/hr = \$296,918,000

iv. Consultant (for suppliers that are *large* companies):

⁴⁵ A 60% overlap factor converts to 40% in the mathematical equation. The concept of “overlap” *reduces* the number of companies subject to the requirements by 60%, leaving the remaining 40% of the companies subject to the requirements (100% - 60% = 40%, or 0.40).

Consultant costs = 711,607 suppliers (large companies) x (100 man-hours x 10% of total work load) x \$200/hr = \$1,423,214,000

Thus, the estimated total cost to suppliers is \$5.14 billion (\$5,145,052,000). The estimated grand total amount for issuers and suppliers is \$5.17 billion (\$5,171,065,960).

D. Issue #4: Diffusion of solutions and efficiencies

NAM does not recognize or anticipate that common solutions will be developed, migrated across multiple companies/industries and create cost efficiencies. Some of these solutions that already exist or (in advanced development) include EICC-GeSI CFS audits, EICC Supplier Information templates, common cross-industry product content information platforms and consulting firms expertise/tools applied across their client bases. In contrast, NAM's numbers reflect an assumption that each individual company must reinvent the wheel in isolation from other existing or developing solutions.

As discussed above, one assumption underlying most of NAM's calculation is that there is always an exclusive and 1-to-1 relationship between each issuer and each supplier, which is unfounded.⁴⁶ Rather than reinventing the wheel at every link in the supply chain – and therefore repeatedly expending 100% of the costs for developing that CMR and supporting information – a more pertinent metaphor is the Microsoft model. Once the product (the CM information) has been produced, it can be replicated at little to no cost (and is still valid for other links in the supply chain). Work performed once can be diffused to multiple customers who request the same type/scope of conflict minerals information (assuming reasonable consistency in the effort scope and information outputs). With CM information completed, a supplier with only one customer gains no efficiencies in cost or labor – however, if that supplier has many customers, the efficiency gains are significant. Indeed, the supplier-issuer relationship is in many cases complex, and in most cases the issuer's supply chain is not wholly unique. Nevertheless, multiple issuers will almost certainly ultimately receive minerals from the same ore refinery. In other words, once the smelter has developed its CM program, those costs are not repeated for each individual customer conducting business with that smelter, and likewise for other layers in the supply chain. The very structure of the mineral supply chain thus allows for the creation of labor and cost efficiencies due to mutuality of suppliers – a significant efficiency factor not recognized by NAM.

This efficiency gain however assumes that (1) credible, consistent and validated information rolls up to the CMR and SEC filings and (2) there is a reasonable alignment between the supplier's available information and the information needed by its customers. The more exclusive the supplier-customer relationship – the fewer the customers among which the CM program cost/efforts may be spread. The less

⁴⁶ In reality, we believe there is substantial overlap/mutuality in customer relationships; therefore, once a supplier satisfies the CM requirements for one customer, that supplier will not need to wholly replicate their CM program development efforts/costs for other customers. This creates "overlap" or "mutuality" cost efficiencies that are not recognized in the NAM model.

exclusive, the more customers there are, the more pertinent the Microsoft metaphor. Thus, mutuality at certain points in the material flow, e.g. the smelting level, creates overlap which translates into effort reduction and cost efficiency.

E. Issue #5: Nature, scope and cost of CMR audit

The nature and scope of the audit, while a principle cost factor determinant, has not yet been clearly defined by the SEC. Neither the law nor the SEC's proposal specifies the requirements for the scope or execution of a due diligence process for the Conflict Minerals Report or the related audit. Instead, SEC has stated that it would be inappropriate for them to prescribe any specific guidance on the due diligence efforts.⁴⁷ This allows companies/industries to develop a framework reflecting their own unique circumstances, products and supply chain. However, the scope of the effort and the information relied upon must be specifically described in the Report.⁴⁸

Consequently, interpretations vary of what constitutes a "due diligence process" or the related "audit." If one were to follow the OECD Guidance, mineral traceability audits and chain of custody audits would be required as well along the supply chain. The variability in defining the audit scope thus also accounts for differing implementation cost estimations.

Due diligence not only involves company-led management system development and implementation, the CMR to be submitted to the SEC must contain a certified audit which "shall constitute a critical component of due diligence in establishing the source and chain of custody of such minerals."⁴⁹ As a part of the due diligence requirement, NAM estimates that 75% of issuers (4,500) would have to conduct a CMR audit.⁵⁰ NAM goes on to posit that suppliers will "be asked to use the same diligence as issuers," which includes audits,⁵¹ and continues by estimating that this audit mandate will impact 20% of the nation's 278,000 small companies (55,600). At the same time, using other figures provided NAM, the collective number of material supply contracts potentially subject to audits under their scenario could be 12 million (2,000 x 5,995 = 11,990,000).

Yet there is no requirement in the rule or law that suppliers be audited – only the issuers who are subject to the regulations must conduct audits of their CMRs.⁵² Suppliers will be subject to auditing only if they are (a) themselves also an issuer, or (b) required to do so by their customers. The burden and cost for such audits are voluntary in the context of the regulation and the impetus for such audits is likely to be reduced if issuers are

⁴⁷ 75 Fed. Reg 80961.

⁴⁸ 75 Fed. Reg. 80958, 80972 - 80975

⁴⁹ Exchange Act Section 13(p)(1)(B).

⁵⁰ Page 25 of the NAM reports states: "We conservatively estimate that 75 percent, or 4,500, of the nearly 6,000 affected issuers will have to submit a CMR."

⁵¹ NAM comments, p. 26.

⁵² See Section 1502(b) and the preamble discussion at 75 Fed. Reg 80958. Further, the OECD Guidance only discusses audits of smelters – not other points in the supply chain, not even from the mine to the smelter.

allowed to use "reasonably reliable representations" from suppliers, a concept that is both included in SEC's proposal⁵³ and supported by NAM. Therefore, because supplier audits are outside the regulation and the driver of/need for such audits is likely to be reduced by "reasonably reliable representations" from suppliers, we are excluding those from our analysis and we focus on issuers only.

By applying the small/large company ratios to the NAM estimate of 4,500 issuers:

- $4500 \times 72\% = 3240$ small company issuers required to develop/audit a CMR;
- $4500 \times 28\% = 1260$ large company issuers required to develop/audit a CMR.

As specified in Section 1502(b) of the law, the audits undertaken by issuers must be conducted in accordance with SEC audit/auditor standards⁵⁴ and focus on the existence, functionality and controls of the issuers' CM management processes that are included in the CMR (i.e., a management system audit). It is critical to understand that a management system audit reviews and assesses how (or *if*) the audited entity:⁵⁵

- establishes, maintains and communicates standards/expectations of behaviors;
- obtains, reviews and verifies relevant information;
- establishes and implements related control mechanisms;
- uses information in its decision-making;
- documents, tracks and reports data/decisions; and
- conducts follow-up on problems, concerns or issues that are identified within their business processes, audits or from external parties.

In performing such an audit – and in establishing expectations for the efforts and results – certain key factors must be considered:

- As with other SEC audit scopes, the CMR audits will provide "*credible and/or reasonable assurance*" – not absolute assurance, certainty or guarantees;
- As in any audit scope/process, limitations will exist in the quality and quantity of data;
- The instability in DRC and the region sets the stage for rapid and unforeseen changes in location/scope of conflict areas. While a mine or transportation route may be identified as "conflict free" at a point in time during supplier due diligence and the CMR development, supply chain reviews and audit process, it is possible for the status to change subsequent to the due diligence/CMR activities;⁵⁶
- CM management systems and controls will be tested within the audit process, which means that a sampling of the technical supporting data will be assessed. Sample size determination factors and methodologies are incorporated in SEC audit standards; in many cases, the sample size will be less than 100%.

⁵³ 75 Fed. Reg 80957.

⁵⁴ Such as *Government Auditing Standards: July 2007 Revision* (GAO-07-731G), commonly referred to as the "Yellow Book." This publication is referenced in SEC's proposal as the appropriate standard recommended by the GAO (*see* Footnote 101 at 75 Fed. Reg 80958). The Yellow Book incorporates many audit/auditor standards of the American Institute of Certified Public Accountants (AICPA).

⁵⁵ This is the general framework used for audits conducted under Sarbanes-Oxley, certain other financial auditing processes and certification systems such as ISO9001, ISO14001 and OHSAS18001.

⁵⁶ NAM concurs. See NAM Comments, p.14

To summarize, a CMR audit is not intended to confirm the technical accuracy of the material content, product certifications, supply chain linkages or other supporting data. Instead, the CMR audit will determine what, if any, internal processes exist to obtain appropriate technical information on product content, the supply chain flow, and how that information is assessed, used and reported by the audited company.⁵⁷

Given the above, the scope of CMR audits is *highly dependent* on the complexity of an issuer's management systems and *less dependent* on the number of suppliers within the supply chain. We assume that larger companies have more complex management systems than smaller companies⁵⁸ and agree that NAM's unit cost estimates of \$25,000 (small company) and \$100,000 (large company) are reasonable. Therefore, our audit cost estimates are as follows:

Small issuers:

- 3240 x \$25,000 per CMR audit = \$81,000,000

Large issuers:

- 1260 x \$100,000 per CMR audit = \$126,000,000

Thus, the total cost for CMR audits of small and large issuers will come to \$207,000,000 per year as issuers are to file the CMR including a certified audit with the SEC on an annual basis.

F. Issue #6: The use of information technology for record keeping

Apart from preparing the policies, procedures and controls, a significant level of effort is further required to implement the program at the issuer and supplier level. According to IHS,⁵⁹ as seen in the electronics sector faced with the EU-RoHS directive; and the chemical, process and manufacturing sectors for the EU-REACH regulation, it takes time to adopt and develop standards (what information, in what format, updated in what frequency, communicated via what mechanism, etc.). Even when standards are in place, companies commonly are faced with the "diversity of data" problem. Obtaining the appropriate content from suppliers is a major challenge: some suppliers provide documents explaining their compliance, some may not provide much useful information (e.g. e Yes/No compliance), some provide full material disclosure (FMD), some provide FMD but omit portions they consider a trade secret, others provide test reports. Generally speaking, considerable effort is usually required to obtain and transform supplier-furnished information into a usable parametric format that applications can

⁵⁷ A position that NAM also seems to take – see comments on "reliable due diligence" and "commercially practicable effort", p.13

⁵⁸ This assumption is supported by our analysis of IT systems and costs in Issue #6.

⁵⁹ IHS is a global information company in the pivotal areas such as energy, economics, geopolitical risk, sustainability and supply chain management. (<http://www.ihs.com>)

understand and be useful to engineers, procurement personnel, auditors and regulators.⁶⁰

NAM's comments to SEC state that: *"issuers must collect information and maintain auditable records for the SEC. To do so, issuers may need to develop new IT systems to collect information on their suppliers. Most manufacturers and suppliers may have to develop new computer systems or revise existing systems to track, store, and exchange data regarding mineral origins. Because of the global nature of supply chains, these systems will need to be available globally, have high storage capacities, and advanced communication, and data transfer functionalities. Based on previous changes to supply chain computer systems over the last several years, the cost per company is likely to range from \$1 million to \$25 million depending on the size and complexity of the supply chain. Again making a conservative estimate of \$1 million per IT system, the collective cost would be \$6 billion (\$1 million X 5,994 = \$6.0 billion)."*⁶¹

While among the 5,994 issuers there are large companies that would typically use highly sophisticated enterprise systems (such as SAP or Oracle) in order to manage complex supply chains, the remainder of the 5,994 companies should be estimated using a lower unit cost. Therefore, using the IPC survey as an indication of company size distribution, the total annual revenues of the small and medium companies would in no reasonable way support the idea that all 5,994 issues have IT requirements that justify a \$1 million modification each.

Moreover, in its economic impact analysis NAM apparently did not consider the possibility of shared software solutions and shared product information platforms. In the business world, a ubiquitous *modus operandum* is that once a software company has developed an appropriate piece of software tailored to the information capture and storage needs of an issuer, it is sold or licensed to other companies in the same market. Examples also abound of shared product information platforms, such as in the chemical industry. IHS' Design & Supply Chain group for example provides critical information and insight typically in the form of reference databases on a wide variety of goods including electronic components – including compliance with regulations such as RoHS and REACH. IHS explains:⁶²

We aggregate content from suppliers, we standardized and classify the content, and we "describe" parts and materials in standard ways to allow part research, comparison, selection and reporting. This is labor-intensive work that many companies choose to outsource. In the IHS model we make these value-added databases available to our subscribers where the cost of content collection, processing and maintenance is shared across our installed base. This typically saves our subscribers considerable expense. Of course, not all parts or materials that all our subscribers use are in our database – so we offer content services to obtain this content specifically for them. This is especially true for their custom parts. Sourcing and processing individual parts for a client is very cost-intensive.

⁶⁰ written correspondence with IHS. October 1, 2011.

⁶¹ NAM Comments, p. 24

⁶² written correspondence with IHS. October 1, 2011.

We've seen ranges of prices in industry of about \$5/part to more than \$30/part for chemical compliance information over the last 5 years. With a reference database the prices reduce considerably. For "mature" databases, developed over an estimated 5 years, companies would be able to match up to 60% of their parts and would reduce their annual "build and maintain" cost/part by up to 80% for matched parts.

In sum, the efficiency effect due to replication and adaptation of a viable software solution seems not to have been considered by NAM. Furthermore, the Internet and encryption – commonplace in viable businesses – could serve in the place of the "data transfer functionalities." Indeed, this has already begun with the EICC-GeSI Supplier Information Template Tool.⁶³

Based on its 2011 survey, IPC found that "anticipated costs for information technology modifications ranged from 12,500 to 750,000 dollars."⁶⁴ The survey result details indicate an average unit cost of \$205,000 for IT system changes, which was skewed by the single largest value of \$750,000.⁶⁵ According to their survey demographics, 72% of the respondents are companies with revenues less than \$100 million. In looking at the data as a whole, the IPC study supports the position that the actual number of companies likely to incur IT system modification expense levels as posited by NAM is much smaller than 5,994.

Small issuers:

We apply the small company ratio of the 5,994 issuers to the small company cost estimates from IPC: $5,994 \times 72\% \times \$205,000 = \$884,714,400$

Large issuers:

The large company costs from NAM may then be applied to the large company ratio of the 5,994 issuers: $5,994 \times 28\% \times \$1,000,000 = \$1,678,320,000$

Thus, the total estimated cost to issuers for instituting the necessary IT systems modification in view of conforming with the Conflict Mineral Act is \$2.56 billion.

VI. A Third Economic Impact Model

A. Estimated number of affected companies

1. Width and depth of mineral/metal supply chain

⁶³ EICC & GeSI. *GeSI and the EICC® Launch Conflict Minerals Reporting Template and Dashboard*. August 3, 2011.

<http://eicc.info/PDF/GeSI%20and%20the%20EICC%20Launch%20Conflict%20Minerals%20Reporting%20Template%20and%20Dashboard.pdf>

⁶⁴ IPC Comments on SEC Proposed Rule on Conflict Minerals, March 2, 2011, p. 21

⁶⁵ If the outlier figure is factored out, the average drops more than 50% to \$96,000.

Each company has its own supply chain, consisting of a certain number of direct or 1st tier suppliers and each of those direct suppliers has its own set of suppliers. In the analysis below, we use the term “width” to refer to the number of suppliers across each supplier tier and “depth” to refer to the number of tiers between the company and the mine. Clearly, each company’s width is variable. Issuers will not readily know the width of their supply base beyond the 1st tier, but generalized estimates can be made by using industry association data and basic inquiries to points within the supply chain.⁶⁶

In addition, not every supplier in each tier will be subject to conflict minerals activities (e.g., service vendors, suppliers of paper products, fossil fuels, and raw textiles to name but a few). Therefore, the width of a company’s supply chain reasonably expected to be subject to CM efforts is a percentage (less than 100%) of their total supply base. The width for purposes of CM efforts consists only of materials/products that contain CM.

For many companies/industries (especially in the electronics industry and supply chain), a significant amount of product content information is likely to exist already within information management systems required by other laws in the US and EU.⁶⁷ As an example, we refer to the results of the IPC survey replicated in *Table 1* above indicated that 35.75% of the supply base was known to contain the conflict mineral, whereas 46.25% of the supply base was known not to contain the conflict mineral.⁶⁸

A typical supply chain also consists of multiple layers (depth), but the number of layers is wholly dependent on the type of product, the distance from the ore source and/or ultimate final product. Therefore, each company’s supply chain depth is variable. Companies may obtain information on their supply chain from publically available information, industry association data and basic inquiries to suppliers.⁶⁹

Figure 2 below illustrates the width and depth concept in the mineral supply chain, which takes on an hourglass shape. The upstream supply chain is best defined as companies handling mineral concentrate, and the downstream supply chain as companies using refined metal, separated by the smelter / refinery link. The figure furthermore depicts the conflict minerals flow through the various mineral and metal supply chains. The top section blue background (A.) marks the sectors considered by this paper’s economic impact model. The bottom light yellow background (B.) denotes tiers not considered by this paper’s economic impact model.⁷⁰

⁶⁶ For instance, Figure 1 of *Comments on SEC Regulatory Initiatives Under the Dodd-Frank Act Title XV: Miscellaneous Provisions- Section 1502 Conflict Minerals (P.L. 111-203)*, IPC-Association Connecting Electronics Industries, November 22, 2010.

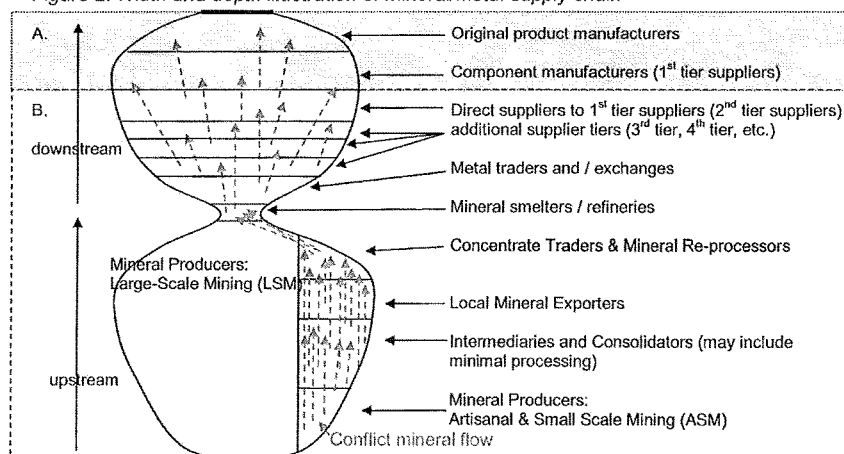
⁶⁷ More details on this matter are provided in Issue #6 on software systems.

⁶⁸ Results of an IPC Survey on the Impact of U.S. Conflict Minerals Reporting Requirements, February 2011 p. 5-6

⁶⁹ Figure 1 of *Comments on SEC Regulatory Initiatives Under the Dodd-Frank Act Title XV: Miscellaneous Provisions- Section 1502 Conflict Minerals (P.L. 111-203)*, IPC-Association Connecting Electronics Industries, November 22, 2010. <http://www.sec.gov/comments/df-title-xv/specialized-disclosures/specializeddisclosures-78.pdf>

⁷⁰ Neither does SEC or NAM: SEC (Vol. 75, No. 246) only considers the burden to issuers; NAM (in its Comments to the SEC) only considers costs to the issuers and 1st tier suppliers.

Figure 2: Width and depth illustration of mineral/metal supply chain



Source: supply chain sequence adapted from OECD publication⁷¹

Yet to begin to determine the economic impact also on the lower tiers of the supply chain, we propose a formula. The following formula applies previously discussed concepts to estimate the total number of suppliers within a company's supply base that may reasonably be expected to address CM requirements:

$$S_{CM} = \sum_{i=1}^n (S_T * x\% * .4)$$

Where:

S_{CM} = Estimated total number of the company's* suppliers subject to CM due diligence efforts

n = Estimated number of tiers in the company's supply chain (i.e., depth) back to mine of origin

S_T = Estimated number of suppliers in each tier n (i.e., width)

x = Percent of materials/product per each tier n identified (or estimated) as containing 3TG.** This factor will (a) increase as the supply tier nears the smelter, and becomes 100% for tiers between the smelter and the mine, and (b) probably decrease as the supply tier moves closer to the final product.

⁷¹ OECD (2011), *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, OECD Publishing. <http://www.oecd.org/dataoecd/62/30/46740847.pdf>

.4 = The mathematical factor reflecting supplier overlap. A constant, this factor converts the number of contractual relationships to the number of unique businesses that would be required to implement CM programs.

* In this context, "the company" refers to a single business entity that is located at any point in the supply chain.

** Determination made based on screening activities. This is not the overlap factor, but screens out suppliers in each tier that provide services or materials that do not contain 3TG such as fuel, copy paper, etc.

2. Traceability in the conflict mineral supply chain

A distinction needs to be made between traceability of minerals from mine to smelter (upstream) and from smelter to end product (downstream) as is illustrated in *Figure 2* above. An investigation by the Enough Project provides general contours of the upstream supply chain of conflict minerals from the eastern Congo.⁷² The 5 principal upstream links in the conflict mineral supply chain, between each of which are providers of material transportation, are:

1. *Mines:*
 - 13 major mines and approximately 200 total mines in the region
2. *Trading hubs:*
 - Minerals: two major trading hubs in the region, Bukavu and Goma;
 - Gold: Butembo and Uvira are also key trading hubs
3. *Exporters:*
 - There are currently 17 exporter companies based in Bukavu and 24 based in Goma
4. *Neighboring transit countries:*
 - Rwanda, Uganda, Burundi, Tanzania, Kenya
5. *Smelters and Refineries:*
 - *Tin:* 10 main smelting companies process over 80 percent of the world's tin, almost all of which are based in East Asia
 - *Tantalum:* four companies make up the overwhelming majority of the market based in Germany, the U.S., China, and Kazakhstan
 - *Tungsten:* several processing companies in China, Austria, and Russia.
 - *Congolese Gold:* Dubai, Switzerland, Italy, and Belgium

Based on this study, the upstream supply chain of conflict minerals appears to be a significant and definable sub-set of the mineral supply chain universe that involve many more countries than just the DRC.

The smelter level, representing the choke point in the hourglass figure above is a critical link. The EICC Conflict Free Smelter (CFS) program for example specifically reviews the documentation from mine to smelter. While the CFS program does not certify products,

⁷² Enough Project. *From Mine to Mobile Phone: The Conflict Minerals Supply Chain*. Nov 10, 2009. <http://www.enoughproject.org/files/publications/minetomobile.pdf>

it approves smelters. According to UL-STR, auditor of the EICC Conflict Free Smelter program, the key point of the program is that smelters are *100% input verified*, which means “an approved smelter has undergone a 100% documentation review for all purchases of minerals in the audit period.”⁷³ Consequently, inputs used to manufacture a given product are conflict-free. An additional benefit is that 100% input verification does not require internal lot traceability, a rather tedious process which involves controlling which raw material lots were processed into which final product lots. Thus, 100% input verification appears to be the easier approach than internal lot traceability. Furthermore, the 100% input verification approach is progressive in that it is concerned with recent purchases only.⁷⁴

The information is then made available “upwards” to their customers, such that actors within higher tiers can track their minerals back to the smelter and match the results to the publicly available list of “conflict-free” smelters. Downstream traceability is enabled when suppliers in lower tiers submitting the same information as the 1st tier suppliers in effect establishing a chain of custody system.

While it is not within the scope of this white paper to describe in detail and provide the economic impact analysis also for the upstream supply chain, we point to the International Tin Research Institute's (ITRI) Tin Supply Chain Initiative (iTSCi) which, *inter alia*, seeks to provide verifiable mineral chain of custody information auditable by the smelter validation programme of downstream industry as recommended by the OECD Guidelines, and enable relevant US companies to report on due diligence efforts to the SEC as required by the Dodd-Frank Wall Street Reform and Consumer Protection Act.⁷⁵ ITRI argues that a 3-month pilot project in North and South Kivu and Maniema in late 2010 proved the concept of rapid and simple implementation of chain of custody (employing bag-and-tag system as well as certification system) in the ‘conflict affected’ areas of the DRC activity. ITRI's 5-year plan, authored in February 2011, provides details and costs projections on how much it costs to build a clean supply chain for tin, estimated in the tens of millions. As the iTSCi establishes a viable paradigm for a clean tin supply chain, it may also serve as a model for doing the same for tungsten, tantalum and gold.

Implementing upstream traceability in Central Africa is however associated with a host of challenges which differ significantly from those in the downstream supply chain. Field-proof systems are required to ensure traceability of DRC sourced material, and the costs and challenges (including the rapidly changing security situation) may surpass the management systems approach. Aside from the need for lower tier levels to adapt/revise management systems to respond to CM customer requirements, technical requirements of tagging and bagging minerals generate other, non-management system related costs. Other cost factors include the need for additional capacity for mine inspectors, police, and customs officials. Thus, the challenges associated with

⁷³ Written correspondence with UL-STR. October 17, 2011. <http://www.strquality.com>

⁷⁴ Ibid.

⁷⁵ International Tin Research Institute. iTSCi 5-Year Plan: DRC & Rwanda. February 2011. <http://www.sec.gov/comments/s7-40-10/s74010-326.pdf><http://www.sec.gov/comments/s7-40-10/s74010-326.pdf>

strengthening the infrastructure and institutional capacity of the country of origin present significant obstacles to traceability in the supply chain of the DRC and certain neighboring countries.⁷⁶

B. Efficiencies, overlap and synergies in the implementation of Section 1502

i. Mutuality / overlap

As we have discussed above in various sections of this analysis, each company's program development and implementation costs are only *partially* proportional to the depth and width ("D/W") of their supply chain. Due to the overlap in supplier relationships, per-company program costs may increase to some extent as D/W increases, but the incremental cost for each supplier/tier is not 100% as NAM assumes. Most of the CM program is a management system – a framework of policies, procedures, training, internal controls and monitoring that will be developed at a corporate/business unit level to be applied across the company's operations and through the supply chain as determined by S_{CM} (i.e., the "Microsoft model"). Certain on-going information management activities within the program will be directly proportional to S_{CM} , but the operational tasks supporting those activities will be governed by this overarching management structure, the development of which is not repeated for each supplier (assuming reasonable consistency in information demands through the supply chain).

NAM assumes that all CM program costs will be fully replicated for each company in the supply chain. As we explained above, this assumption is incorrect as it should be anticipated that companies will share suppliers of certain products/materials. Where overlap exists, the incremental costs for CM program development will be generally reduced as explained above. This is most clearly demonstrated at the smelter level, which is generally considered by industry to be the "choke point" for CM material flow. Ores must be processed into commercially usable material by the smelters and there are a limited number of smelters worldwide; therefore smelters are the point in the supply chain that has the highest degree of mutuality. Mutuality will occur at other points in the supply chain, but perhaps not to the extent as seen in smelting. Regardless, as mutuality increases, the lower the incremental costs for implementing overarching management systems.

ii. Correction factors

The NAM estimate fails to recognize a number of important factors impacting costs. This paper applies three correction factors in order to properly gauge the extent of economic impact:

1. Large / small companies: As previously discussed, we divide the issuers and their suppliers into two groups: big and small. We estimate that 72% of issuers are small and 28% of issuers are large.

⁷⁶ Written correspondence with UL-STR. October 17, 2011. <http://www.strquality.com>

2. Non-CM mineral suppliers: based on findings from the IPC survey, only 53% of 1st tier suppliers provide materials, parts or components that contain 3T or gold and would thus be subject to CM management program efforts/costs.
3. Overlap / mutuality of suppliers: this correction factor accounts for the fact that issuers have some (possibly many) suppliers in common and so controls for overlapping issuer-supplier business relationships. This paper operationalizes this overlap factor as 60%, which means on the aggregate only 40% of the number of 3TG material supply contracts unique effort/cost is required.

iii. Technology transfer efficiencies

The NAM model implies that each company implementing CM programs will do so wholly independently. In reality, this is not likely. There are already a number of initiatives and services in the market that allow companies to take advantage of “shared solutions.” These include:

- Shared platforms: Industry initiatives (such as in the electronics and tin mining industries) are already creating common platforms for information collection, tracking, reporting and even auditing to reduce the labor effort/cost burden on companies. This includes various material declaration and certification programs and standards that currently exist, such as IPC 1752 Materials Declaration standard for electronic data exchange of product materials information. Other current initiatives include the EICC-GeSI CFS and Supplier Reporting Template, the ITRI “Bag and Tag”, and the recently announced Public-Private Alliance for Responsible Minerals Trade (PPA).⁷⁷
- Internal information management systems: As mentioned in Section V.F. *Issue #6* above, many companies impacted by the CM law are also subject to other regulations related to product content, such as the EU Regulation on *Registration, Evaluation, Authorisation and Restriction of Chemicals* (REACH) and *Reduction of Hazardous Substances* (RoHS). REACH is a chemical registration and authorization legislation with a growing list of chemicals that require manufacturers to register the use of those chemicals if used or released by products above certain amounts as well as reporting to customers upon request the presence of any of those chemicals about certain limits. RoHS and its 2011 update (known as “RoHS recast”) set threshold amounts for certain elements in a variety of product types that require manufacturers to restrict their use. Information required by REACH and RoHS regulations is managed in a similar manner even though the restrictions, information reporting and registration requirements are quite different. At the heart of each of these regulations is the need for information collection and management systems to ensure that all the needed data is gathered from the supply chain and that it is consistently reviewed, updated, verified and ultimately disseminated to customers and regulators. These

⁷⁷ U.S. Department of State. Under Secretary for Democracy and Global Affairs Maria Otero Travels to the Democratic Republic of Congo. Oct. 6, 2011. http://kinshasa.usembassy.gov/pressrelease_english_10062011.html

systems contain substantial overlap with the information tracking needs for CM programs. There are many vendors for IT-based systems for managing REACH and RoHS data.

iv. Human resource efficiencies

- Cross-cutting consulting firms: Consultancies provide management system development, supply chain due diligence and audit services that leverage their experience in management systems development/implementation, material traceability, sourcing, information management systems, auditing and specifically conflict minerals programs. Companies choosing to use such firms/services are likely to see improved process development and launch times as compared to internal program development in a vacuum.
- Cross-cutting law firms: Law firms that are developing expertise in the subject area who can advise multiple clients and cross-pollinate best practices across their client base.

v. Customer/supplier synergies

We have referenced the idea of “reasonable consistency in information demands through the supply chain” within this analysis. SEC’s final regulations will create the platform for such reasonable consistency, therefore providing opportunities for cost efficiencies. In addition, it is expected that suppliers will also communicate with their customers to ensure alignment between their mutual CM data needs, which will also support reasonable consistency and cost efficiency.

C. Model comparison SEC vs. NAM vs. Third model

With our Third model’s cost estimations previously justified, *Table 2* below juxtaposes SEC’s and NAM’s economic impact model with that of our Third model, itemizing the main cost drivers as laid out in the SEC proposed rule and NAM comments. As with the NAM and SEC estimates our Third model only takes into account the economic impact incurred by issuers (5,994) and 1st tier suppliers (860,066), and not all the actors throughout the entire mineral/metal supply chain. However, unlike NAM and SEC, our paper provides a conceptual mathematical model that can be applied to estimate companies beyond the 1st tier. Thus, the geographical scope of all three models focuses on companies operating within U.S. jurisdiction, or those who directly supply U.S. issuers.

Table 2:

<i>Task</i>	<i>SEC estimation of costs</i>	<i>NAM estimation of costs (low end estimate)</i>	<i>Third model estimation of costs</i>
1. Strengthening internal management	"an aggregate estimate of \$16.5 million for the	\$1.2 billion (which is calculated as 2 hours x	\$26 million for the 5,994 issuers; \$5.14 billion for

systems in view of performing due diligence	1,199 issuers"	\$50 per hour x 2000 suppliers x 5,994 companies	1 st tier suppliers to those issuers, for a total of \$5.17 billion
2. Instituting the necessary IT systems (to collect information and maintain auditable records for the SEC)		\$6.0 billion (\$1 million x 5,994)	\$884 million for issuers who are small companies; \$1.68 billion for issuers who are large companies, for a total of \$2.56 billion
3. Commissioning CMR audit	"We estimate that the 1,199 affected issuers' \$25,000 cost would result in to an industry wide audit of approximately \$29,975,000."	Big companies: \$450 million (\$100,000 x 4,500 issuers) Small and Medium sized companies: \$1.39 billion (278,000 companies x .2 x \$25,000)	As only issuers are required to conduct audits: \$81 million for issuers who are small companies; \$126 million for issuers who are large companies, for a total of \$207 million
4. issuer-led implementation of risk-based programs that use company control processes to verify that suppliers are providing credible information		\$300 million (1000 X \$50= \$50,000; \$50,000 X 5,994)	(We believe task 4 and 5 are embedded in the first activity scope and cost within management system modifications. Therefore we are not costing out these elements individually.)
5. cost of filing SEC forms	\$24,768,000		
<i>Total</i>	<i>\$ 71,243,000 (not including internal company labor)</i>	<i>\$9.34 billion (including internal company labor)</i>	<i>\$7.93 billion (including internal company labor)</i>

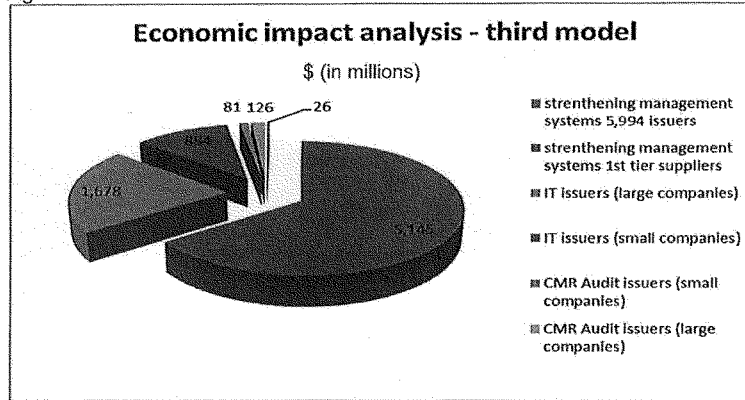
Thus, the total charge to implement due diligence according to our Third model, as itemized in the table above, would come to \$7.93 billion. We thus regard Section 1502 as a "major" rule as it will have an annually effect the economy exceeding \$100 million.⁷⁸

Yet the order of magnitude of \$7.93 billion must also be viewed relative to the size of the industries that depend on these minerals – including the industrial, aerospace, healthcare, automotive, chemicals, electronics/high tech, retail and jewelry sectors – and the trillions of dollars in wealth creation these sectors combined generate.

Figure 3 below visualizes the costs breakdown per task and per implementer.

⁷⁸ According to the designation as per the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA")

Figure 3:



D. Internal versus external company costs

Indeed, \$7.93 billion represents considerable resources that would need to be dedicated to the fulfillment of the law. Yet it should also be considered what proportion of that amount comprise costs that can be covered with "in-house" human resources that may already exist within the individual companies (effectively diverting internal resources), and what proportion of those resources would go to cover external costs. *Table 3* below delineates each type of "cost."

Table 3: In-house resource costs vs. money outflows

Task	Internal human resource costs	Money outflows
1. Strengthening internal management systems in view of performing due diligence	<p><u>Issuers:</u> (internal costs) small companies: \$6,473,520 large companies: \$7,552,440</p> <p><u>Suppliers:</u> (internal costs) small companies: \$222,688,500 large companies: \$3,202,231,500</p>	<p><u>Issuers:</u> (consultant costs) small companies: \$8,631,360 large companies: \$3,356,640</p> <p><u>Suppliers:</u> (consultant costs) small companies: \$296,918,000 large companies: \$1,423,214,000</p>
2. Instituting the necessary IT systems	(Some company personnel time would be required for operating the IT systems)	<p><u>Small issuers:</u> \$884,714,400</p> <p><u>Large issuers:</u> \$1,678,320,000</p>
3. Commissioning CMR audit	(Some company personnel time would be required for working with the auditors)	\$207,000,000
Total	\$3,438,945,960	\$4,502,154,400

The delineation above shows that slightly more than half of resources expended for the law would comprise resource outflows – money paid to 3rd parties for consulting, IT systems and audits. Yet almost half of the \$7.93 billion burden may be covered with “in-house” human resources that may already exist within the companies affected by the law.

E. Economic costs to issuers versus suppliers

A further object of analysis is the supplier / issuer breakdown of economic cost. Simply re-arranging the organization of costs as presented in *Table 3* above, *Table 4* below tabulates the issuers / suppliers costs.

Table 4: Economic costs to issuers versus suppliers

<i>Task</i>	<i>Economic cost to issuer</i>	<i>Economic cost to suppliers</i>
1. Strengthening internal management systems in view of performing due diligence	<p><u>Issuers: (internal costs)</u> small companies: \$6,473,520 large companies: \$7,552,440</p> <p><u>Issuers: (consultant costs)</u> small companies: \$8,631,360 large companies: \$3,356,640</p>	<p><u>Suppliers: (internal costs)</u> small companies: \$222,688,500 large companies: \$3,202,231,500</p> <p><u>Suppliers: (consultant costs)</u> small companies: \$296,918,000 large companies: \$1,423,214,000</p>
2. Instituting the necessary IT systems	<p><u>Small issuers:</u> \$884,714,400 <u>Large issuers:</u> \$1,678,320,000</p>	(minor costs may be incurred by suppliers conforming with the issuer IT parameters)
3. Commissioning CMR audit	\$207,000,000	-
Total	\$2,796,048,360	\$5,145,052,000

As the issuers/suppliers cost comparison reveals, the bulk (65%) of the total cost – \$5.1 billion, would be incurred by the suppliers, while the smaller portion (35%) of the total – \$2.8 billion – would be carried by the issuers. This is due to the fact that there are multiple suppliers for each issuer, even taking into consideration our various correction factors. As we noted earlier, SEC’s analysis failed to include the impact on – and associated costs incurred by – the suppliers.

If one were only to consider the efforts/costs necessary at the issuer level – which SEC effectively did – the economic impact according to our model is \$2.8 billion. However, since in light of Section 1502 the entire supply chain needs to be reformed in order for traceability/chain-of-custody to work from mine to CMR disclosure – and arrive at an accurate determination of whether “conflict” is in the mineral – the suppliers along the supply chain must also be factored into the economic impact equation.

F. Sunk versus recurring economic costs

While there would be some internal operational costs associated with performing ongoing due diligence and maintaining the necessary IT systems on a company-to-company basis over the years, the initial implementation of these efforts could be considered "sunk costs" in the economic sense in that they are one-off costs in exchange for services which cannot be thereafter sold or the value otherwise recuperated. Once the management systems are in place, the codes of conduct have been revised, the new procedures are instituted, etc., the recurring cost of operating same is very low compared with the initial implementation. Thus, the estimated \$7.73 billion it would take to implement Section 1502 (without taking into consideration the annual \$207 million expenditure in independent CMR audits), would constitute a one-time cost/investment. Thereafter, the most notable "external" cost the issuers would incur on an annually recurring basis is a \$207 million expenditure in commissioning independent CMR audits.

VII. Conclusion

All parties seem to agree that the Dodd-Frank Section 1502 is an important catalyst for action, and that only collective action can implement systems that will be able to track and account for the source of the minerals originating from Central Africa. Our model contends that affected companies in the U.S. would need to carry out three principal actions in order to be in a position to comply with the new law: (1.) strengthening internal management systems in view of performing due diligence, (2.) instituting the necessary IT systems, and (3.) commissioning CMR audits. We estimate that the cost of implementing these actions comes to \$7.93 billion. However, almost half of the total cost – \$3.4 billion – would be met with in-house company personnel time, and the rest – \$4.5 billion – would comprise outflows to 3rd parties for consulting, IT systems and audits. Comparing the costs to the issuers vs. the suppliers, the bulk of the total costs – \$5.1 billion or 65% – would be incurred by the suppliers (the group not included in SEC's analysis), while the smaller portion of the total – \$2.8 billion or 35% – would be carried by the issuers. These implementation costs would however be borne by thousands of individual firms in lucrative industries such as the industrial, aerospace, healthcare, automotive, chemicals, electronics/high tech, retail and jewelry industries.

This white paper estimates the economic impact of the law to the issuers and 1st tier suppliers, and thus focuses on the impact to companies and their suppliers operating within U.S. jurisdiction. Yet costs will also be incurred throughout the upstream and smelter supply chain links. While promising traceability initiatives – such as the ITRI's Tin Supply Chain Initiative (iTSCI) and the Conflict Free Smelter (CFS) program – demonstrate market viability, law enforcement and customs protocols in affected central African countries would need to be significantly strengthened to make such schemes truly viable.

As this economic impact analysis demonstrates, transparency and disclosure in the mineral / metal sector will come at a significant cost. As a sweeping law affecting a multitude of industries in the U.S., we regard Section 1502 as a "major" rule as its effect on the economy will exceed \$100 million per year. The challenge facing the SEC is to fashion regulation that enforces the spirit of transparency and disclosure as envisioned by Dodd-Frank Section 1502, yet promulgate circumspect regulation that prevents undue burden being placed on the industries involved in the mineral / metal sector, and so avert whole industries extricating themselves from DRC originating minerals.

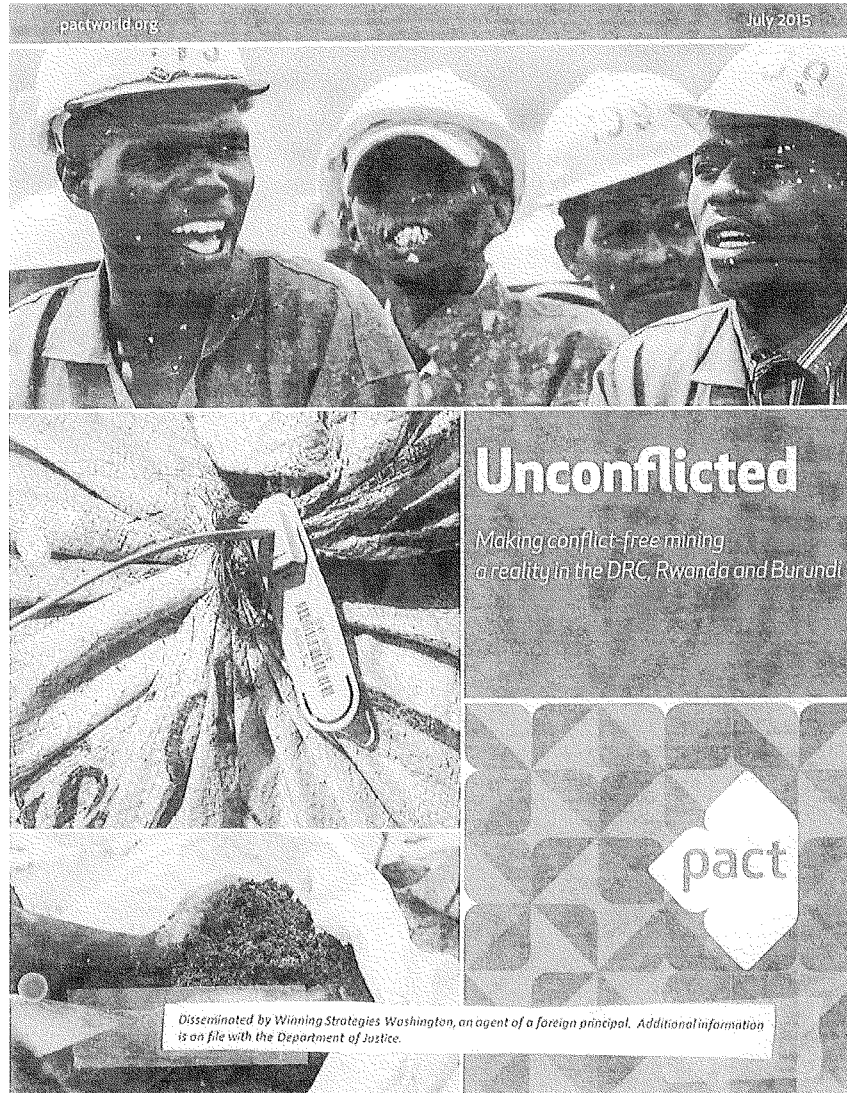
IX. Definitions

<i>Term</i>	<i>Definition</i>
1 st tier supplier	Companies that supply materials/products to original product manufacturers, retailers and issuers.
2 nd tier supplier	Companies that directly supply the 1 st tier suppliers.
3T	Tantalum, tin and tungsten
3TG	Tantalum, tin, tungsten and gold
Chain of custody	The ability to physically track the minerals at all points along their trading chain, from their source in the mine to their point of export and delivery to the smelter/refinery.
CM	Conflict Mineral
CMR	Conflict Mineral Report
Downstream	Companies using refined metal
Due diligence	"The process through which enterprises can identify, prevent, mitigate and account for how they address their actual and potential adverse impacts as an integral part of business decision-making and risk management systems." ⁷⁹
Issuer	"An organization that registers, distributes, and sells a security on the primary market." ⁸⁰ An issuer is thus an organization that sells securities (stock) to the public.
Upstream	Individuals and companies handling raw ore or slightly processed ore products such as mineral concentrate

⁷⁹ OECD. *OECD Guidelines for Multinational Enterprises*. 25 May 2011.
<http://www.oecd.org/dataoecd/43/29/48004323.pdf>

⁸⁰ Farlex Financial Dictionary. 2009.

pactworld.org July 2015



Unconflicted

Making conflict-free mining
a reality in the DRC, Rwanda and Burundi

pact

Disseminated by Winning Strategies Washington, an agent of a foreign principal. Additional information is on file with the Department of Justice.

About Pact

Pact is a promise of a better tomorrow for all those who are poor and marginalized. Working in partnership to develop local solutions that enable people to own their own future, Pact helps people and communities build their own capacity to generate income, improve access to quality health services, and gain lasting benefit from the sustainable use of the natural resources around them. Based in Washington, D.C., and at work in nearly 30 countries in Asia, Africa, Eastern Europe and Latin America, Pact builds local promise with an integrated, adaptive approach that is shaping the future of international development.



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Learn more about Pact's Mines to Markets work at www.pactworld.org/mining

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Acronyms

3Ts	Tin, Tantalum and Tungsten
CEEC	Centre for Evaluation, Expertise and Certification
CFSP	Conflict Free Smelter Program
CFTI	Conflict Free Tin Initiative
DBSA	Development Bank of Southern Africa
DMFA	Dutch Ministry of Foreign Affairs
DRC	Democratic Republic of Congo
EICC	Electronic Industry Citizenship Coalition
EITI	Extractive Industries Transparency Initiative
FFI	Fauna and Flora International
GeSI	Global e-Sustainability Initiative
GMD	Geology and Mines Department of Rwanda
ICGLR	International Conference on the Great Lakes Region
ITRI	International Tin Industry Association
ITSCI	ITRI Tin Supply Chain Initiative
MIMIRENA	Ministry of Natural Resources of Rwanda
NGO	Nongovernmental organization
OECD	Organization for Economic Cooperation and Development
OECD DDG	Organization for Economic Cooperation and Development Due-Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
OSH	Occupational Safety and Health
RNRA	Rwanda Natural Resources Authority
SAEISSCAM	Service for the Organization and Assistance of Artisanal and Small-Scale Miners
SEC	The U.S. Securities and Exchange Commission
SHI	Solutions for Hope
T.I.C.	International Tantalum Association
WFCL	Worst Forms of Child Labor



A Time for Action

Dear Reader,

Every adult deserves to earn a dignified living.

Small-scale mining may be one of the most difficult occupations – it's back-breaking work, often with the most rudimentary tools – but millions of men and women choose to engage in it, for a variety of good reasons.

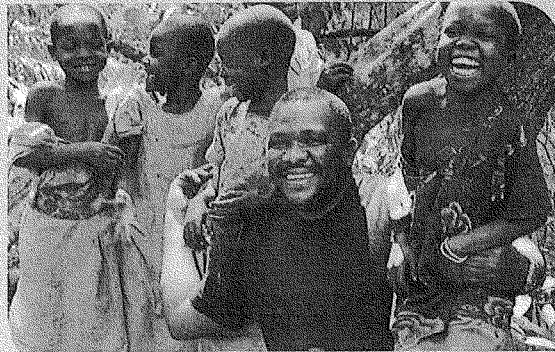
In Africa's Great Lakes region, Pact and its partners are known for operating the only internationally recognized supply chain monitoring system that ensures minerals go from miner to multinational without interference along the way. As you'll read, we've implemented this system at hundreds of mines in the Democratic Republic of Congo, Rwanda and Burundi, affecting tens of thousands of artisanal miners.

But our work in the artisanal mining industry isn't just about supply chains. It's about making sure that a miner is safe to pursue his or her work – undeterred by armed interference and armed against occupational hazards – and free to engage in a marketplace that rewards hard work. It's about the opportunity to provide for one's family and realize hopes for a better tomorrow.

While our work providing the environment for conflict-free mining is understandably high-profile, it's merely one component of our Mines to Markets signature initiative. Around the world, we also work to reduce child labor in mines, to introduce health and sanitation measures to mining camps and villages and to improve non-mining business opportunities for women who either work in or are connected to mining.

I hope that in reading this report, you see the difference we are helping to make, and I encourage you to reach out to Pact and our partners to learn more about how you can join our effort.

Mark Viso
President
Pact



Foreword

Why We — and I — Do This Work

I am often asked why Pact, a development organization, is working on an industry project for miners, mineral traders and smelters. We are not a commercial company and we have no financial interest in the mining business, and yet we choose to work in close partnership with industry to implement a mineral traceability and due diligence system in Africa's Great Lakes region.

Why do we do this work? Pact believes that well-regulated business is an effective and sustainable vehicle to deliver the development needed to lift people out of poverty. Natural resource extraction is the economic backbone of the economy in many countries where Pact works, and an integrated approach to development that combines responsible business with good governance and strengthened local capacity can deliver better, safer, healthier livelihoods.

Pact started work in the minerals sector of the Democratic Republic of Congo (DRC) long before the United States Congress enacted conflict minerals legislation in 2010 (Section 1502 of the Dodd-Frank Act). In fact, our work has recognized the importance of the sector to economic development since 2005, when we launched a multi-project Mines to Markets program with partners in government, industry and civil society to maximize the benefits of mining for rural communities

and the national economy. When Dodd-Frank came to pass, we were already working on interventions and solutions to protect men, women and children laboring in Central Africa's artisanal mines. Participation in efforts to make mineral supply chains "conflict free" was a natural step for us.

In the Great Lakes region of Africa, the conflict minerals legislation was initially seen as a colonial-style imposition, as a penalty and even as a stealth mechanism to divert mineral trade to competitor markets. Despite this resentment and the hardships that the countries have suffered, the governments of the DRC, Rwanda and Burundi, in partnership with industry and Pact, adopted and adapted the ITRI Tin Supply Chain Initiative (ITSCI) - a comprehensive due diligence and mineral traceability system - as a means to strengthen the governance of their minerals sectors.

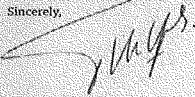
In the five years since the partnership started, ITSCI has protected and improved the lives of tens of thousands of miners working in hundreds of mines that are free of armed groups and human rights abuses. Hundreds of local businesses are meeting international standards of operations to become credible suppliers to international minerals markets. Actors in the region are already focusing on other important socio-economic issues as the supply chain spotlight starts to expand beyond conflict minerals and directs attention to broader challenges in the sector. Pact is beginning to overlay desperately needed development programs onto these conflict-free sites to further improve development outcomes in these underserved communities.

This is what drives Pact.

As to what drives me, I would like to share just a few personal thoughts before you read this report.

As a Congolese citizen, I am incredibly proud of what is being achieved in my country and in those of our neighbors to build a responsible minerals sector in the region. As a development professional, I continue to be amazed at the rate at which we have achieved broad, impressive results in such a short time. As a brother, I remain deeply concerned for, and committed to, the welfare of the artisanal miners of the Great Lakes region who still need so much support to earn a safer, more dignified living. As a father, I am working to build a better country for my children so they never have to face such hardship. Pact's Mines to Markets program and the ITSCI system are part of that better future.

Sincerely,



Yves Bawa
Regional Director, DRC, Rwanda and Burundi
Pact



UNCONFLICTED 2015

UNCONFLICTED

Making conflict-free mining a reality in the DRC, Rwanda and Burundi

In 2010, when the United States adopted legislation to stop the use of conflict minerals in American products, the system known as iTSCI, that today is in use at more than 800 mines in Africa's Great Lakes region, was in its infancy. The road to this point has not been easy. It involved many partners working in muddy trenches to build a local answer to an international question demanding immediate action: How do you reliably trace hundreds of thousands of tonnes of minerals from mine to market in one of the most challenging environments in the world?

Of course, the iTSCI system is not perfect. But by all measures, it works.

What follows is an explanation of why iTSCI exists, how it was created, how it works and what must be done to expand the system and build on its success – information that is especially critical as additional Western governments consider their own conflict minerals legislation.

Awareness of Conflict Minerals Grows

Perhaps surprisingly, the first news articles linking the conflict in eastern DRC to minerals markets appeared around 2000, when illegal bush meat hunting in protected areas - to feed the burgeoning coltan¹ mining camps in eastern DRC - came to public attention. An early initiative to address this issue was the Durban Process, led by wildlife conservationists who sought to engage industry in regulating supply chains to address illegal mining. However, attention soon widened, with headlines about violence and human rights abuses by armed groups that controlled mineral flows and preyed upon miners, using their profits to fund corrupt administrations.

Over the following years, reports from the United Nations Group of Experts and nongovernmental organizations (NGOs) such as Global Witness and Fauna and Flora International (FFI) drew attention to the complex conflict in the region and the devastating impact of the illegal mineral trade. The key minerals identified as being the source of the conflict were tin,

tantalum and tungsten (now often referred to as the '3Ts') and gold. The terms 'blood minerals' and 'conflict minerals' became regular features in the media, and organizations such as The Enough Project launched a powerful lobby in the United States to push for legislation to control mineral sourcing in the region.

Private Industry and Government React

Consumer companies and industry associations were highly sensitive to the negative publicity and took steps to respond. Notable among these steps were the actions of the International Tin Industry Association (ITRI), which, later joined by the International Tantalum Association (I.T.A.), began developing a due diligence and traceability mechanism to enable their members to buy so-called clean minerals from the region. This was the start of the ITRI Tin Supply Chain Initiative (ITSCI). At the same time, the Electronic Industry Citizenship Coalition (EICC) and the Global e-Sustainability Initiative (GeSI) started to work on a mechanism to control minerals entering their supply chains from metal smelters, called the Conflict Free Smelter Program (CFSP).

In 2010, the powerful NGO-led lobby achieved a significant milestone. The Dodd-Frank Wall Street Reform and Consumer Protection Act, passed by Congress in July of that year, contained a specific section on conflict minerals. Dodd-Frank Section 1502 directs the U.S. Securities and Exchange Commission (SEC) to require companies publicly traded on U.S. stock markets to disclose their use of the 3Ts or gold if the mineral is "necessary to the functionality or production of a product." Companies must ensure that minerals in their supply chain are not produced under conditions of conflict, do not fund conflict and are not connected to human rights abuses. The regulation applies to minerals coming from the DRC or any adjoining



Sources of the '3Ts'

Cassiterite is the ore containing tin

Wolframite is the ore containing tungsten

Tantalite (also locally called coltan) is the ore containing tantalum

¹ Coltan is a local name for ore containing the minerals columbitum (also known as niobium) and tantalum. The name comes from the abbreviation of columbo-tantalite.



country.² The SEC rules were aligned with the Organization for Economic Cooperation and Development's (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (also known as OECD DDG).

The Impact of Dodd-Frank and Efforts to Respond

In the Great Lakes region of Africa, mining of tin, tantalum and tungsten has been carried out for decades under various systems and at various scales. In the colonial era, industrial tin mines existed in many areas. However, these fell into disrepair and decay in the latter

decades of the twentieth century. When Dodd-Frank was passed, all mining of the 3Ts in the region was being carried out on an artisanal basis using rudimentary tools and manual labor, or in some cases with a degree of mechanization and investment by small-scale mining companies, although still using manual labor. Some mines were reportedly controlled by state and non-state armed groups, or their minerals were assumed to be financing conflict and human rights abuses. But many others with no connection to conflict were merely providing a living for miners, traders and their families.

Dodd-Frank caught the region – including the DRC, Rwanda and eight other countries – off-guard and unprepared. The law was drafted without consultation with governments in the region and with no mechanisms or resources in place to help them cope with the immediate and massive impact on their minerals indus-

² <http://www.auditanalytics.com/blog/an-initial-look-at-conflict-minerals-dodd-frank-section-1502/>



tries. Economies with no connection to the targeted conflict were among those affected.

The power of Dodd-Frank created bewilderment in central Africa, with miners asking, *How can an American law dictate how we work in Africa?* Locally, Dodd-Frank is often referred to as "Obama's Law." Dodd-Frank did not have the support of the United Nations, was not developed as a multi-country treaty or agreement, and does not have legal jurisdiction in the DRC or other affected countries. Despite this lack of local legitimacy, the legislation has had enormous influence. Dodd-Frank did not need the cooperation of the DRC to achieve its goal; it pulled the powerful lever of the market. End-user industries faced negative pressure from NGOs and lobby groups and reputation and brand risks, as well as legal reporting requirements, costs of compliance and penalties for failure to clean up their supply chains. The easiest response was to cut all central African material from their products, and this is what many chose to do.

The immediate impact was the threat of a de-facto embargo on the sector if mineral buyers suspended their trading relationships in the region. The livelihoods of tens of thousands of tin, tantalum and tungsten miners and other operators were at risk, with no warning or explanation. No alternative employment was offered.

iTSCI System Launches

It was against this background that iTSCI started operations. The system had been in development by ITRI and others before 2009 based on United Nations Group of Experts reports and ITRI's desire to improve artisanal mining areas – a large and important part of the tin business. There was also an assumption that regulation was coming and industry needed to get ahead of it to maintain local markets and livelihoods. ITRI teams visited 3T mines, studied supply chains, identified local partners, held negotiations with governments in the region, and developed documentation to comply with anticipated regulations.

iTSCI was designed as an industry-led, holistic system to deliver due diligence and mineral traceability. It conformed to OECD DDG, Dodd-Frank and, critically, requirements of the CFSP smelter audit process that had been developed by EICC and GeSI.

Beginnings of Pact's Involvement

In early 2010, ITRI and Pact entered into a partnership for the field-level implementation of iTSCI. The system was piloted in the DRC in May of that year, just before passage of Dodd-Frank. Ironically, the pilot was halted immediately after the passage, as DRC Presi-

dent Joseph Kabila suspended all mining and mineral exports from eastern DRC for a period of several months.

Rwanda was the first country in the Great Lakes region to commit to large-scale implementation of iTSCI. Starting in December 2010 (before CFSP came into force in April 2011), the country quickly moved to have all of its 3Ts mines covered by the system. This alone was a remarkable step, as popular opinion was that Rwanda had few, if any, mines. This myth was dispelled when more than 500 were visited and recorded in the course of start-up baseline studies. In the DRC, also just before CFSP came into force, the southern province of Katanga implemented iTSCI with funding from local businesses and the Development Bank of Southern Africa (DBSA). Within months, dozens of mines and thousands of miners were working again in Katanga. With considerable awareness already raised in the tin industry, buyers transitioned smoothly to the iTSCI system. Motorola Solutions set up a project to engage tantalum buyers in a direct-purchase, "closed-pipe" supply chain through the Solutions for Hope (SfH) initiative at one conflict-free mine in Katanga using the iTSCI system. Electronic components supplier Kemet set up a similar project in Katanga using iTSCI. These efforts helped signal to consumer-focused, end-user industries that resumption of tantalum purchases from the region was possible.

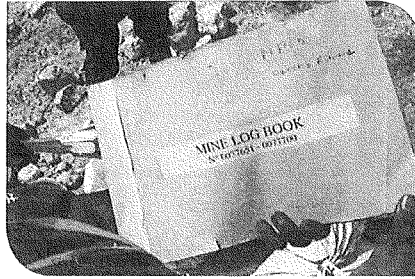
Mineral traceability in the eastern DRC provinces of South Kivu and Maniema followed, when the Dutch Ministry of Foreign Affairs (DMFA) gave funding for startup in South Kivu in 2013 through the Conflict Free Tin Initiative (CFTI). More support came from local businesses, especially in Maniema. The start of activities in the volatile province of North Kivu in 2014 depended entirely on local business investment. It was only in 2015 that the program could be launched in the critically important Walikale area of North Kivu, which was the subject of much attention during the pre-Dodd-Frank conflict minerals campaign.

Why Have We Seen Greater Progress in 3Ts than in Gold?

Dodd-Frank was equally applied to four minerals without an appreciation of the diversity of their supply chains and market structures. Tin, tantalum and tungsten (the 3Ts) are all heavy minerals that are hard to move without infrastructure. Their local value is relatively low, given that they must be exported to be smelted because of in-region capacity and infrastructure issues. The smelters of these minerals are the effective choke point in the supply chain. So long as a credible upstream mechanism feeds clean minerals into regulated smelters, minerals flowing downstream – to retailers and ultimately consumers – will be compliant with the standards. The U.S. market for end products containing tin, tantalum and tungsten is extremely important, enough so that most smelters want to be able to sell their product into that market. In light of this, key tin and tantalum smelters took leadership roles in bringing about change.

However, Dodd-Frank also includes gold, which is an entirely different commodity – a high-value material that in its raw form can be used as currency. It is portable and does not require infrastructure to move or process. It is fungible, making traceability difficult. The major international markets for gold include India, China, Russia and the United Arab Emirates, whose buyers are less concerned about eventually reselling into U.S. supply chains. There are no systems in place for due diligence or mineral traceability of conflict-free gold. For these and other reasons, despite the iTSCI system's significant successes in regulating 3Ts supply chains, Dodd-Frank has had negligible impact on gold mining and trade and conflict in the Great Lakes region.

Startup in Burundi took several years and was finally achieved in 2014 with the support of the national government, local businesses and the World Bank. In 2015, the DMFA committed funding for three years of expansion plus strengthening of the iTSCI system.



The Impact of Dodd-Frank

There inevitably have been negative repercussions of Dodd-Frank. These include loss of livelihoods with resulting economic hardship, the cost and time needed for compliance and heavy burdens of reporting and audits. An entirely new industry has sprung up for researchers, consultants, auditors and others who deliver a new suite of services to the "conflict-free" mineral market. A plethora of systems and services are offered to companies to handle SEC reporting with initial compliance costs estimated to reach between \$8 billion and \$16 billion,³ dwarfing the sum available for upstream implementation. The annual schedule of meetings, forums, conferences and working groups on these issues is a full one. Easily accessible mines suffer from "conflict-mineral tourism," with some receiving 12 to 15 visits per month from researchers, journalists, activists, NGOs, government delegations, donors and authorities.

However, despite these unresolved issues and frustrations, it is important to note that Dodd-

Frank, coupled with the iTSCI system, has had a remarkable impact in the region.

Mines in remote areas where exploitation and abuse went unrecorded are now operating under government supervision and are regularly checked to ensure that no armed groups are benefitting. This marks a huge achievement and has been extremely important in delivering security to remote parts of the DRC. Local stakeholder committees have been established with mandates to work with communities to resolve disputes related to the system. Accurate data are available on miners and in production and export levels, enabling governments to improve their management of the sector. Hundreds of local businesses that were operating under the radar five years ago are now reporting on their efforts to implement international standards for responsible operations. Tens of thousands of people are making a living and working in safer conditions, supporting hundreds of thousands of people in the region.

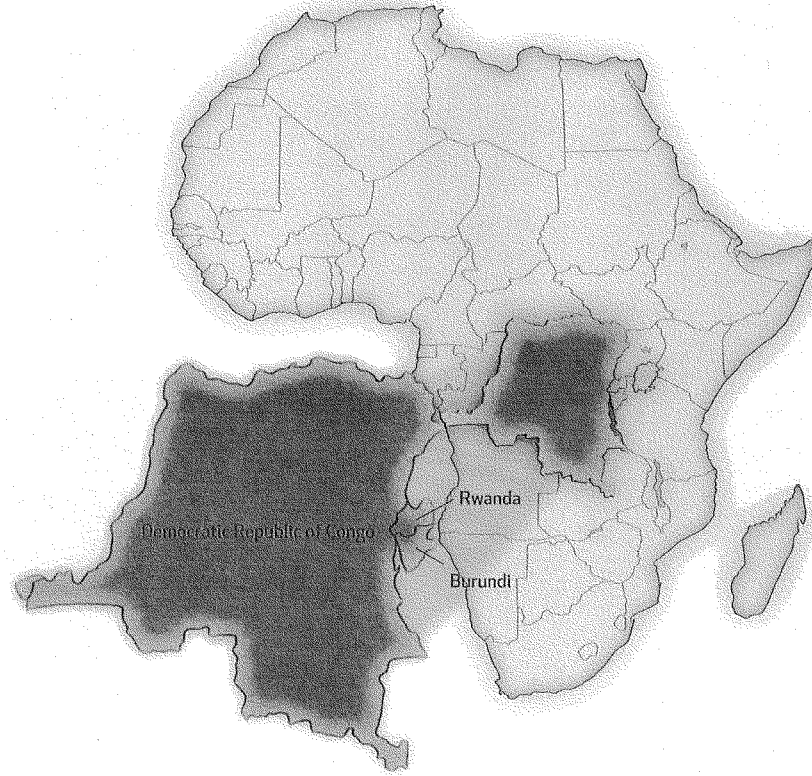
This level of uptake and change would not have happened if adoption had been discretionary. The change came about because the market demanded it - because Dodd-Frank demanded it.

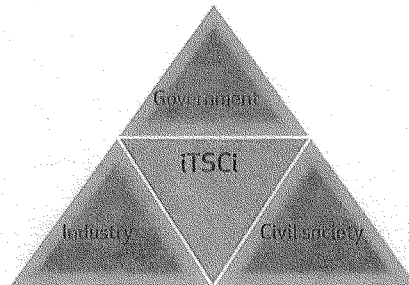
How the System Works

iTSCI is a comprehensive due diligence and mineral traceability system that incentivizes positive change in the Great Lakes region by providing information on clean minerals, enabling access to international markets. Through its various components, including stringent membership standards, audits, baseline studies of mines, mineral tracking, data analysis and incident monitoring, iTSCI has created secure mines that are free of the presence or influence of armed groups and in which human rights abuses are rare, recognized, reported and resolved.

³ <http://www.auditanalytics.com/blog/any-initial-look-at-conflict-minerals-dodd-frank-section-1502/>

Where iTSCi Operates





The field components of ITSCI include: identification of conflict-free mines and mineral trade routes; engagement of local stakeholders in monitoring their status; mineral tracking; mineral production and trade data collection; mineral sampling; and a mechanism for incident reporting and resolution. Data collected in the field is entered into a centralized database, which provides complete chain-of-custody information from mine to smelter. ITSCI involves a multi-step mineral tagging and data collection process implemented by three governments in the Great Lakes region and designed to be entirely absorbed into the normal management practices of government mining services. ITSCI provides complementary services relating to due diligence on companies, management of data within the supply chain and for CFS audits, as well as independent governance assessments, company audits (carried out by ITRI's partner, Synergy Global Consulting) and a dispute resolution process through an ombudsman, Foley Hoag LLP in Washington, D.C. ITSCI also has an advisory board comprised of experts in conflict minerals, including Global Witness.

The ITSCI program is successful due to the combination of these essential components and is

designed to achieve sustainable self-financing when operating at scale.

In sum, as illustrated at left, the ITSCI program is funded by industry and implemented by governments in the region, under the monitoring and training of civil society. Each component is essential to the effective implementation of the program.

ITSCI operates under memorandums of understanding with the governments of the DRC, Rwanda and Burundi. In all countries, ITSCI mineral tagging and data collection is carried out by government agents. This is essential to local ownership and to reinforcing the authority and resources of the state, strengthening good governance and ensuring sustainability of the system. ITSCI is designed to build the capacity of government agencies and workers, strengthening good governance and enabling mineral traceability to be absorbed into the normal functioning of state mining services.

Pact is ITRI's partner for field implementation of ITSCI and supports the governments of the DRC, Rwanda and Burundi in the daily management of mineral traceability and facilitation of participation of local civil society in monitoring the ITSCI process. In the field, working with local partner NGOs, Pact provides training and ongoing support to government agents who are active at three major points along the domestic supply chain: the mine and washing/processing point, the intermediate trading point and the point of export. Minerals are tracked and data is collected at each of these points by the relevant agents. The primary agencies involved in implementing ITSCI are:

- DRC: the small-scale mining service, SAESS-CAM; the Division of Mines; and the mineral export certification authority, CEEC. All of these are in the Ministry of Energy and Mines.
- Rwanda: The Geology and Mines Department (GMD) of the Rwanda Natural Resource Au-

*iTSCi, By the Numbers **

Country	Province	iTSCi Mines	Miners	Average Monthly Production (metric tonnes)	
				2014	thru May 2015
DRC	Katanga	232 sites, 141 active	26,489	475	426
	Maniema	178 sites, 167 active	6,672	176	177
	South Kivu	46 sites, 43 active	2,211	38	153
	North Kivu ¹	15 sites, 14 active	4,250	89	70
Rwanda	All	815 sites, 442 active	37,976	990	840
Burundi	All ²	40 sites, 35 active	3,051	25	32
Totals		1,326 sites, 842 active	80,649	1,793	1,698

* Fact figures, not yet verified by ITRI

¹ Launched March 2014

² Launched April 2014

thority (RNRA), which is part of the Ministry of Natural Resources (MINIRENA).

- Burundi: The Ministry of Energy and Mines.

Pact also supports partner governments in facilitating multi-stakeholder consultation meetings at national, provincial and local levels. At these meetings, other government services are represented including civilian and military security forces and local and traditional authorities. During these meetings, stakeholders including miners, traders, companies, security services, mining services, local administration and civil society discuss issues related to the mining sector. They also implement mitigation measures to lower risks of fraud, conflict, human rights violations or other abuses in the mineral supply chain.

As of April 2015, there were 30 national, provincial and local committees overseeing the implementation of the program and following up on risks in the supply chain.

iTSCi uses an incident matrix to identify and categorize by severity violations of the system and abuses that occur in mining areas or during transport. These incidents may include infractions of the tagging system, security problems, instances of corruption or human rights violations. Every incident is recorded and examined using the OECD risk assessment and mitigation model for progressive movement.

iTSCi is designed to operate as a sustainable self-financed system through a levy paid by mineral exporters. The levy is paid per tonne of metal contained in each tonne of ore covered by the system and varies by mineral. However, the time lag from mine to smelter can be considerable, and local exporters have struggled with years of embargo. Loss of earnings have limited their cash flow to restart business. Therefore, iTSCi needs external donor support to get the system up and running - to prime the pump, so to speak - before levies can be collected. iTSCi is a not-for-profit system in that it covers its operating costs and nothing more.

A Weighty Question

Short ton, long ton, metric tonne. What's the difference?

The smaller U.S. ton is usually called a short ton. It is equal to approximately 907 kilograms, or 2,000 pounds. The larger British ton is usually called a long ton. It is equal to approximately 1,016 kilograms, or 2,240 pounds. There is also a third measure, the metric tonne - sometimes written as metric ton - equal to 1,000 kilograms, or approximately 2,204 pounds.

ITSCI now has 231 members. This is an extremely important factor in the system's success. About 67 percent are local businesses that just a few years ago were invisible to outside observers. These companies are working to achieve OECD standards in their operations to comply with ITSCI membership requirements, and this represents a sea-change in the way business is done in the region. ITSCI's policy of inclusivity, which promotes best practice, provides market incentives for change and engages actors by bringing them in from the cold, has been critical to its success.

The Current Implementation of ITSCI in Numbers

Five years after the first ITSCI pilot was launched in Nyabibwe, South Kivu, there are now 1,326 identified mine sites in the ITSCI program in the DRC, Rwanda and Burundi (of which more than 800 are currently active as of the date of this report). In March 2015, there were more than 80,000 miners participating in the program. Mines provide employment for many additional individuals who transport, process and trade minerals and other goods and services. If they are counted, along with immediate dependents of miners - conservatively estimated at five per miner - the total number of people whose livelihoods have been

safeguarded by the ITSCI program is estimated to approach 1 million. This number does not reflect the development of communities around mining hubs, the inclusion of which would considerably increase the total number of indirect beneficiaries of the program.

In 2013, it was estimated that 1,395 metric tonnes of the 3Ts were produced within the ITSCI program on a monthly basis. In 2014, this number increased to 1,793 metric tonnes. So far in 2015, production figures have dropped somewhat as there has been a significant drop in the price of tin due to reduced international demand. This is not related to conflict-free minerals sourcing issues but is a global issue affecting tin production worldwide.

The latest analysis of the International mineral trade estimates that 87 percent of DRC cassiterite and 92 percent of central African cassiterite came from a mine that was formally included in the ITSCI program. Percentage coverage of tantalum and tungsten trade is expected to be similar, although it is more difficult to define precise figures for those metals. Added to this, the trade has generated legal taxes paid to governments in the region.

Current Challenges for the ITSCI System

Over the years, despite its importance for local communities, the ITSCI program has faced challenges.

The ITSCI program had to cope with the mobility of the sector, as artisanal miners frequently move among sites looking for better opportunities. This means that new baselines are always required for mines, yet there are limited resources for this kind of repeat activity. Artisanal miners lack proper equipment

to maximize production, but funding for the system depends on production levels, resulting in difficulty achieving financial sustainability. Solutions undertaken by the ITSCI team have included expansion of the program and motivating other actors in the supply chain (such as mine owners and mineral traders) to provide more equipment for miners. However, problems remain in places such as Maniema and Burundi where low production levels make economies of scale difficult.

With expansion of the program to North and South Kivu, the level of required monitoring of the security and human rights situation at mines and along transport routes is high. While this monitoring is essential for every mine in the program to stay conflict free, it comes at a cost. The ITSCI team has also reinforced its anti-smuggling work and is in the process of starting a partnership with a local NGO to carry out a whistle-blowing mechanism to reinforce ITSCI's efficiency in reporting and following up on incidents along the supply chain.

Other challenges include difficulty transmitting data from remote sites, missing or illegible information and limited numbers of available government agents, some of whom are not consistently paid. Continued retraining of government agents is necessary, although many have become experts in traceability procedures. The introduction of electronic data collection and transfer is helping, but it is not an ideal solution in all areas and comes with additional costs.

The Next Five Years

Five years after Dodd-Frank, the landscape for the 3Ts in the Great Lakes region is dramatically different than it was in July 2010. At that time, there was a palpable desperation about what was going to happen and extreme frustration that regulation was being forced upon the region against its will. Today, these frustra-

tions persist, yet the benefits of Dodd-Frank are visible and tangible, with transparency in a previously opaque sector and security as the norm rather than a distant aspiration.

The current reality of visible, identifiable mines where government agents are present and civil society is monitoring security is an exceptional platform for strengthening security and good governance in the mining sector in the region. There is enormous opportunity to invest in local monitoring committees, to strengthen government capacity and to address other challenges in the mining sector by partnering with and building on the network of traceability and on-the-ground field teams.

So what do the next five years hold?

Leveraging and Expanding Security Zones

To date, there has been a failure to routinely connect broader security processes with what is being achieved in the mineral sector. The value of these monitored oases of security should be built upon for effective scaling-up of stabilization. Unless this happens, 3Ts sites will remain islands of security in a landscape of conflict. Dodd-Frank is based on the expectation that cleaning up the minerals sector will result in less conflict in the region. However, this is not automatic. It requires an integrated, coordinated and large-scale approach. Imagine the illegal trade as a balloon: Squeezing one part simply pushes air into another part. As conflict has gone down at 3Ts mines, it has increased for gold, charcoal and other natural resources.

Responding to Critics: Understanding ITSCI

ITSCI draws criticism from various critics as being expensive and lacking transparency, and it is worth addressing these concerns as doing so leads to improved understanding of the current situation and liberates thinking about the future.

In terms of its cost, ITSCI is a not-for-profit model. It is funded by a levy that should cover its cost of operation. The levy is subject to economies of scale; therefore, the wider the reach of the system and the more production that passes through it, the lower the cost of participation becomes. The system is free to artisanal miners. It is unrealistic to imagine that a system that meets complex international standards, that builds government accountability and transparency, and that is implemented in an area that has some of the greatest challenges in the world – from infrastructure, access and security to corruption and conflict – can be implemented without some degree of cost.

The cost of the system is borne upstream. The levy is paid by exporters with no significant contributions coming from downstream companies. There is no premium for ITSCI material; it must be commercially competitive with other sources if the system is to be sustainable. The cost of the system places a significant burden on local businesses, and there is constant pressure to find ways to reduce the levy, especially when mineral prices drop. Over time, as confidence in the market increases, some oversight activities may be reduced, thereby cutting costs. However, this would have to be acceptable to the smelter audit process, OECD Guidance and end users.

In terms of data transparency, all ITSCI data is collected by the governments of the region and transferred to ITSCI by government agents. Data that is analyzed by ITSCI is shared with governments on the basis of memorandums of understanding that are regularly reviewed. Much of this aggregated data is publicly available but some is not for reasons of commercial confidentiality. No system working with companies will be able to share all data at its own discretion. This is neither acceptable to industry nor required by international standards.

Strengthening Governance in the Mining Sector

Important efforts are being made to improve governance in the sector, and this is a key area for further development in the coming years. The PROMINES project of the government of the DRC and World Bank is supporting the articulation of appropriate policy and building of essential capacity to manage the artisanal mining sector, as well as supporting interventions such as the registration of artisanal miners. The government of Rwanda has articulated its vision for the formal development of its sector with impressive commitments to business resources, investment and gender equity. The government of Burundi is undertaking measures to facilitate and accelerate access to licenses for artisanal miners. The World Bank is supporting Pact and the government of Burundi to use mineral traceability as the basis for revenue transparency with a groundbreaking project to implement the Extractive Industries Transparency Initiative (EITI) using ITSCI as its base. All of these are building on the basis of vibrant, formal trade that has been facilitated by mineral traceability.

Formalization of Artisanal Mining

Even though ITSCI is creating safer mines where miners work free from abuse and predation by armed groups, their working and living conditions in many mines remain pitiful. Some local companies and cooperatives are making real efforts to improve their mining operations, but these are the exception. Artisanal mining remains blisteringly hard manual labor carried out with little consideration for health and safety. The legal status of many miners is, at best, fragile. The sector is under-resourced and performs poorly in terms of efficiency and productivity.

It will be a game-changing achievement if efforts to deliver conflict-free minerals become a stepping stone to a comprehensive process for

the formalization of artisanal and small-scale mining in the region. The ultimate goal is to strengthen legal, safe and secure artisanal and small-scale mining under an appropriate policy framework that allocates resource rights and access, with investments to make it an effective, efficient and resilient livelihood for the men and women of the region.

Greater Regional Collaboration

Three countries in the Great Lakes region are using the same system for tracking their mineral flows. This presents an important opportunity for regional collaboration and cross-border strengthening. The International Conference on the Great Lakes Region (ICGLR) is the primary mechanism for collaboration between these countries on natural resource flows, and iTSCi is integral to the ICGLR Regional Certification Mechanism. Improved data sharing, tax harmonization, customs integration and related activities can build on the shared system currently in operation.

Incorporating other countries into the shared process will also strengthen regional coordination of natural resource governance and flows. Uganda, Tanzania, Republic of Congo and Zambia are natural points for expansion of a unified due diligence and traceability system in the region.

Greater Transparency Leads to Greater Prosperity

The DRC, Rwanda and Burundi have all made great efforts to turn an obligation into an opportunity. Each one of these countries is using iTSCi as a means to extend the reach of their mining services, to gain visibility into their mining sectors, to attract new investment to the country and to generate taxes for the national treasury. The conflict-free minerals agenda is creating opportunities for the mining

sector to develop. Importantly, the inclusion of civil society in the process of developing new policies has become the norm through multi-stakeholder monitoring of iTSCi. As due diligence and traceability become the accepted standard, their relative importance will reduce as other mineral sectoral governance issues come to the forefront.

Local Ownership

A key part of Pact's vision for the coming years is that our involvement will be reduced. This is Pact's signature approach, which focuses on building the capacity of local partners in government, business and civil society so that over time they can sustain the work with true local ownership, independent of international NGO support. We believe that our success comes from creating an environment in which we are no longer needed. However, our ability to withdraw depends on several factors: donor investment in capacity building to allow responsible transfer of duties to local partners in a timely, planned manner; the confidence of international markets in local partners; and the context of the legislation and market changes.

Ongoing Challenges

Many reports about the region focus on difficulties and challenges. While these indeed exist and should not be downplayed, they are not the only story. A concerted effort focused on collective commitment to improvement by strengthening systems that includes some celebration of positive change could make an important contribution to donor and industry confidence in remaining engaged in the region.

The idea of alternative, competing traceability systems is sometimes proposed. However, the practicalities of having multiple systems oper-

ating should be evaluated, as this could lead to exporters and other industry actors effectively paying for multiple sets of compliance, cost barriers to participation for miners, government agents expected to cover two or more

Changing the Face of Artisanal Mining

Pact is one of the leading organizations in the world working on development issues in the mining sector. One of our signature programs, Mines to Markets, works with organizations and businesses around the world on the social impact of mining and social opportunities connected to responsible business practice by mining companies. But much of our effort is focused at the other end of the mining spectrum, working with the "hidden workforce" of millions of men, women and children who carry out back-breaking work in hazardous conditions in rudimentary, artisanal mines across the world.

Our M2M program aims to help artisanal miners to have increased access to health care, improved livelihoods, technical support, access to finance, access to markets and a safer working environment in a legal framework that respects and protects them. Pact's vision is that all people, regardless of which profession they choose, are able to earn a dignified livelihood and lead healthier lives.

While our portfolio of practical action demonstrates our efforts, we intend to go beyond a suite of projects. We aim to change the way people see and understand artisanal miners. We hope to address the lack of dialogue between companies, consumers and the public and artisanal miners and their families about how international regulations and market demands affect their lives.

It is our belief that seeing artisanal miners as individuals with families, stories and aspirations will help to change perceptions of the sector and to direct greater effort and support to making artisanal mining a dignified, legal, safe livelihood.

systems, mineral mixing at depots becoming impossible (so only closed pipe monopolies can operate, rather than an open market) and a breakdown in the integrity of having a single system across the region's borders. In the next five years, a consolidation of progress and a strengthening of a single system for the 3Ts, operating in partnership with national governments and ICGLR, can be a reality if all actors agree to focus on strengthening what already exists.

The issue of mineral fraud in the Great Lakes region persists as a point of concern. However, it is important to note the difference between mineral fraud (illegal or criminal activity) and conflict minerals (an issue specific to Dodd-Frank and OECD). Any system for mineral traceability will focus specifically on the minerals moving through its processes and cannot be held accountable for operations that choose to conduct business outside the system. Expansion of traceability so that it is available in all sites on an equal basis will go a long way toward reducing incentives for fraud.

Despite the success seen in the 3Ts supply chain, gold remains a challenge. Dodd-Frank aspires to control gold but is probably not the most appropriate instrument. A reassessment is required to design an approach that is grounded in the realities of the international gold market and local supply chains. The approach should bring local industry, intermediate traders and all other local actors to the table and be rooted in business barriers and incentives. Treating gold traceability as a governance project will have only limited success; gold traceability needs to be framed as a business opportunity and should embrace the concept of inclusion, which has been an important factor in the 3Ts transformation.

New legislation will be enacted by the European Union, and perhaps also by Canada and others, in relation to conflict minerals. It is important that there is a reasonable degree of coherency among the various instruments to avoid delivering mixed messages and allowing for so-called compliance shopping as miners, traders or illegal actors seek to find opportunities and loopholes.

International supply and demand, mineral prices, competitive sources, new conflicts, changes in government, geopolitical priorities and other macro-level issues all will continue to shape the context in which mineral sector interventions occur. These factors will contribute to determining the relevance and success of Dodd-Frank in Africa. What is sure is that the last five years have delivered huge upheaval, extraordinary change and unexpected benefits in equal measure. The next five may be even more dramatic.

Conclusion and Recommendations

In considering how different actors and sectors can consolidate and scale-up the success of conflict-free programs in the region, the following points are raised for consideration.

Governments in the region should embrace opportunities for sectoral governance that are presented by the new dynamics related to conflict-free mineral markets. Governments must also recognize that systems depend on genuine security in mining regions and credible, coordinated effort to address violations of the system and mineral fraud. Market confidence is relatively fragile and is knocked by media reports of violence, NGO reports of fraud and other negative stories. The governments of the DRC, Rwanda and Burundi need to make all possible efforts to maintain market confidence

by ensuring rigor in the credibility of the system and integrity in the actions of their agents as well as penalizing infractions in a timely and appropriate manner.

External governments in their capacity as bilateral donors should also determine how their development resources can strengthen and expand achievements to date. Seed funding for the final stages of expansion of 3Ts traceability is still needed. Investment in security interventions, social opportunities and needs and better local business services and opportunities all will make major contributions. Artisanal and small-scale mining is a critically important rural livelihood in the region, and investment in making it safer, more efficient, and more productive, coupled with initiatives to reinvest mining revenues into improved income-generating activities, are desperately needed.

For companies, the most important point is to remain engaged. Compliance takes time, costs money, absorbs staff and creates legal and reputational risks. Committing to source minerals from the remote artisanal mine of the Great Lakes region is not necessarily the easiest option, but it is the right one. The successes that have been achieved in terms of improved security can only be maintained by ongoing market engagement that demonstrates and delivers peace dividends to all.

There are key technical, organizational and social issues still to be addressed as a matter of priority, although it must be noted that this could increase operating costs. In considering how donors and downstream actors might add value, attention should be given to: Occupational Safety and Health (OSH) to improve working conditions in mines; the eradication of the Worst Forms of Child Labor (WFCL) from mines; technical and financial assistance to miners, along with support for organization

and representation; and gender equity in the sector.

There are challenges in asking companies to go beyond compliance and add social value to their purchasing activities. Social programming by upstream businesses in the region does occur, both as part of managing local stakeholder relations as well as ensuring that these companies can meet local social investment obligations. However, some downstream companies are also engaging with the social agenda. Qualcomm Technologies, Inc. is supporting improved OSH through development of an appropriate curriculum to be rolled out in ITSCI mines. Boeing, General Electric and Microsoft have made significant contributions to pilot projects to eradicate child labor from mines in the DRC in line with the requirements of the OECD guidelines. If more companies could make commitments to support collective efforts for social benefit, the impact could be significant and would further galvanize local support for traceability.

Media, researchers, NGOs, lobby groups and others have an important role to play. Lobbyists successfully brought the issue of conflict minerals to the attention of policy makers, as shown by the enactment of Dodd-Frank. As a result, huge efforts have been made to develop conflict-free mineral supply chains, and for 3Ts, the vast majority of these minerals in the region are now formal, traceable and conflict-free. ITSCI handles 35,000 transactions per week to enable 400 metric tonnes of clean minerals to enter the international market every week. However, this side of the story gets very little attention in a region where too often good news is no news. Reports still focus on problems and often report them at a disproportionate scale and out of context. Information and observations that would allow the systems to be strengthened would be immensely valuable if shared in the spirit of improvement.

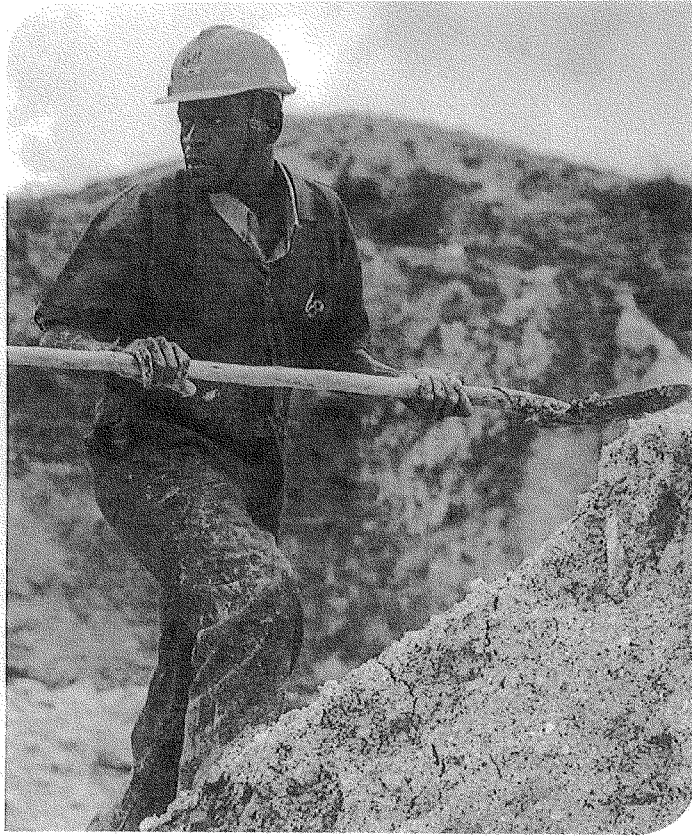
Closing Thoughts

Pact did not support the passing of Dodd-Frank. We were deeply concerned about its likely negative impacts on the already impoverished and vulnerable miners of the Great Lakes region and the lack of resources available to respond to this new legislation. However, we are now the first to say that it has had a profoundly important impact in the region. Yes, it has caused hardship and created costs and burdens, and it is too broad in reach and inappropriate in some parts of its focus. But without it, we simply would not have seen the massive change that has come about.

ITSCI was developed by industry in partnership with the governments of the region. When Dodd-Frank was enacted, ITSCI was ready as a viable, effective solution to enable responsible mineral sourcing to take place. Through the implementation of ITSCI, Pact is proud to report that, today, tens of thousands of miners are working in hundreds of conflict-free mines supporting hundreds of thousands of people. Artisanal mining is still hard and dangerous work, but it is an essential livelihood without which these miners and their families would be in even worse poverty. Hundreds of companies in the region are seeking to adhere to international standards of operation and to be credible suppliers to the international market. They bear considerable costs and participate in audits and reviews to do this, but they do it to safeguard their operations and the jobs of thousands of people they employ. The governments of the DRC, Rwanda and Burundi have made enormous efforts to comply with international expectations and every day hundreds of their agents carry out the tasks necessary to trace huge volumes of minerals from remote mines. They are using the system to improve the governance of their mineral sectors and to increase their national revenues.

There is a remarkable success story to tell in the Great Lakes region of central Africa. Of course

there are challenges, as no system is perfect.
But collaboration to strengthen the system can
contribute enormously to our vision of a time
when we would no longer need to categorize
minerals as 'conflict free' - as this would be the
norm, not the exception.





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An Exploration in Mineral Supply Chain Mapping Using Tantalum as an Example

By Yadira Soto-Viruet, W. David Menzie, John F. Papp, and Thomas R. Yager

Open-File Report 2013–1239

U.S. Department of the Interior
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U.S. Geological Survey, Reston, Virginia: 2013

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Conversion Factors

SI to Inch/Pound

Multiply	By	To obtain
Length		
kilometer (km)	0.6214	mile (mi)
meter (m)	1.094	yard (yd)
Area		
square kilometer (km ²)	247.1	acre
square kilometer (km ²)	0.3861	square mile (mi ²)
Mass		
megagram (Mg); metric ton (t)	1.102	ton, short (2,000 lb)
metric ton per year	1.102	ton per year (t/yr)
gram per metric ton (g/t)	0.03215	troy ounce per short ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:
 $^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$

An Exploration in Mineral Supply Chain Mapping Using Tantalum as an Example

By Yadira Soto-Viruet, W. David Menzie, John F. Papp, and Thomas R. Yager

This report uses the supply chain of tantalum (Ta) to investigate the complexity of mineral and metal supply chains in general and show how they can be mapped. A supply chain is made up of all the manufacturers, suppliers, information networks, and so forth, that provide the materials and parts that go into making up a final product. The mineral portion of the supply chain begins with mineral material in the ground (the ore deposit); extends through a series of processes that include mining, beneficiation, processing (smelting and refining), semimanufacture, and manufacture; and continues through transformation of the mineral ore into concentrates, refined mineral commodities, intermediate forms (such as metals and alloys), component parts, and, finally, complex products. This study analyses the supply chain of tantalum beginning with minerals in the ground to many of the final goods that contain tantalum.

One of the great difficulties to overcome in mapping a supply chain is lack of transparency in the chain—whether it is related to the locations and types of facilities, the materials that the facilities consume and (or) produce, the facilities' production capacities, or the users of the products produced. Not knowing this information presents a significant barrier to understanding the risk of disruption in supply. Also, the geographic distribution of facilities may increase the risk of supply disruption if those facilities are dependent on the same infrastructure.

Supply chain mapping and analysis are tools used to identify the risks of disruption in supply. Each of the facilities that provide key components, perform particular processes, or produce goods is a node on a supply chain map; linkages between nodes are material flow paths. The supply chain nodes and paths constitute the supply chain structure. Singular nodes in a supply chain are unique facilities that provide a key component or perform a key process in the production of a good; they are sometimes called "pinch points."

Disruptions in a supply chain can occur when there is a significant change in the supply structure; the likelihood and possible magnitude of a disruption are determined in part by the characteristics of the chain. A supply chain with multiple facilities that perform each production process or that possess unused capacity (redundancy) is likely to be less subject to disruption—and to be more resilient—than a chain in which only one facility is able to perform a part of the production process or when the facilities in the chain are all operating at full capacity. Although there are significant benefits to redundancy in a supply chain, the cost of building and maintaining redundancy may be large enough to lead organizations to forego those benefits. Failures of production at singular nodes are more likely to cause disruptions in the production of a final good than are failures at redundant nodes. Singular nodes in the supply chain of a good may be difficult to identify, and failures of singular nodes can have surprising results. Multiple linkages suggest redundant material supply routes, implying a more robust supply chain.

A recent example of supply chain disruptions involving the failure of a singular node was owing to a natural disaster—the magnitude 9.0 earthquake and associated tsunami that struck Northern Honshu, Japan, on March 11, 2011. The earthquake and tsunami caused widespread

devastation across the region, as tens of thousands of people were killed, hundreds of thousands of homes were damaged and (or) destroyed, and the commercial operations of firms were interrupted. The earthquake also disrupted a number of supply chains, so study of the event can provide some perspectives on supply chain disruption.

Northern Honshu is home to a large number of significant mineral production facilities, including nine cement plants, eight iodine plants, four iron and steel plants, four limestone mines, three copper facilities, two gold refineries, two lead refineries, two zinc refineries, one titanium dioxide plant, and one titanium dioxide sponge plant. Damage from the event resulted in a significant reduction in Japan's mineral production. Production of high-purity aluminum, cadmium, smelted and refined copper, and nickel in ferronickel was reduced by more than 10 percent, while production of ferroalloys, gold, lead, steel, silver, and zinc decreased by lesser amounts (Menzie and others, 2011; Kuo, 2013).

Much of the reduction in production was owing to the reduced availability of electricity and damage to important infrastructure, such as roads and ports, which affected the operations of many facilities. In some cases, damage to facilities affected only a particular site. In one case, damages to a singular node had surprising results. Titanium dioxide is used to make paint, and, because of the widespread use of paints, there are many such plants. Therefore, one would not have expected far-reaching consequences to result from damage to a single titanium dioxide plant. The plant in Northern Honshu, however, was the sole supplier of black and red paints used by Ford Motor Co. (United States) for a large number of its vehicles. The damage to the titanium dioxide plant interrupted the production of red and black vehicles of certain models until substitute paints could be identified. In this instance, the titanium dioxide plant constituted a singular node in the production chain (Naughton, 2011; Kuo, 2013).

Physical Properties of Tantalum

Tantalum is a transition metal with physical and chemical properties that are very similar to those of niobium. A refractory metal, tantalum is ductile, easily fabricated, resistant to corrosion by acids, and a good conductor of heat and electricity. Tantalum is also characterized by high melting and boiling points of 2,996 degrees Celsius (°C) and 5,425°C, respectively. The abundance of tantalum in the Earth's crust is 0.7 parts per million. Tantalum does not occur naturally as a free metal; however, tantalum occurs in a range of oxide mineral species, including ixiolite, microlite, tantalite, tapiolite, and wodginite. Tantalum-bearing mineral deposits are found in igneous rocks, which include carbonatites, granites, pegmatites, and syenites (British Geological Survey, 2011; Papp, 2012a; Roskill Information Services Ltd., 2012).

World Mine Production

In 2011, world mine production of tantalum increased by 7 percent to 706 metric tons (t) from 660 t in 2010. Rwanda accounted for 27 percent of total mine production in 2011; Brazil accounted for 20 percent; the Democratic Republic of the Congo [Congo (Kinshasa)], 15 percent; Ethiopia, 14 percent; China, 11 percent; Mozambique, 6 percent; Nigeria, 5 percent; and Burundi, 2 percent (fig. 1; Mobbs, 2012; Papp, 2013; Tse, 2013; Yager, 2013a–c).

The leading producers of tantalum have varied considerably since 2000. Australia, which was the leading producer from 2001 through 2008, ceased production in 2010, although it continues to have large resources of tantalum. For most years between 2001 and 2013, Brazil was the second ranked producer of tantalum. Since 2007, the proportion of production coming from Central Africa has

increased. In 2011, production from Central Africa accounted for more than 40 percent of world production (Papp, 2009, 2010, 2011, 2012b).

Tantalum Refined Products and End Uses

Products made of refined tantalum include carbides, ingots, oxides, powders, and metal products, including plates, sheets, rods, and wires. Major industries that consume tantalum include the automotive, ceramic and surface coating, chemicals, construction, engineering, electronics, medical, and metallurgical industries, as well as the military. The electronics and metallurgical industries are the leading users of tantalum. The electronics industry accounts for about 50 to 60 percent of tantalum consumption, and the metallurgical industry accounts for about 20 percent of consumption. In the electronics industry, capacitors, which are the largest single end use for tantalum, accounted for about 40 percent of total tantalum consumption in 2011. Tantalum capacitors are intermediate manufactured products that are used in a variety of final goods, such as automotive electronics, cell phones, hard disc drives, light-emitting diodes, and personal computers. In the metallurgical industry, tantalum superalloys are used mainly in aerospace applications (such as jet engine blades) and land-based gas turbines. These superalloys contain from about 3 to 11 percent tantalum. Metallurgical products include sheets, plates, welded tubes, rods, and wires. These products account for about 8 to 11 percent of tantalum consumption (Roskill Information Services Ltd., 2012). Figure 2 shows the relationship among refined tantalum products, intermediate manufactured products, and final (consumer) goods.

Production of Mined Tantalum Minerals

Brazil and Rwanda, which were the leading producers of tantalum ore and concentrates in 2011, together accounted for 47 percent of the world's mine production of tantalum. The locations of significant tantalum mines and prospective producers are shown in figures 3 and 4, respectively, and selected deposits and producing areas are briefly discussed below. The mines and prospective producers are identified in tables 1 and 2, respectively, along with their annual capacities, facility type, ownership, and status. The numbers used to identify locations in figures 3 and 4 are keyed to the "ID" in tables 1 and 2, respectively.

Tantalum production in Australia stopped in 2010; however, Australia contains large resources of tantalum in the Greenbushes and the Wodgina deposits, and production is expected to resume in the future. Greenbushes is located about 250 kilometers (km) from Perth in southwestern Western Australia. The Greenbushes Mine, which is hosted by the Archean Greenbushes pegmatite and includes surface and underground workings, had a production capacity of about 550 metric tons per year (t/yr) of tantalum pentoxide (Ta_2O_5). The Greenbushes pegmatite contains significant resources of lithium, tantalum, and tin. The Greenbushes operations include a crusher and primary and secondary processing plants, which produce concentrates (Partington, McNaughton, and Williams, 1995; Global Advanced Metals Pty Ltd., 2013a).

Global Advanced Metals Pty Ltd. (GAM) has also mined tantalum at its Wodgina operation, which is located about 100 km southeast of Port Hedland in the northwestern part of Western Australia. Wodgina had a production capacity of about 250 t/yr of Ta_2O_5 from tantalum-bearing pegmatite at the Mount Cassiterite and the South Tinstone open-cut mines. The Wodgina deposit is hosted in the Archean North Pilbara Craton, which contains at least 120 pegmatites in more than 27 pegmatite groups, including the Wodgina (albite type) and the Mount Cassiterite (albite-spodumene type) pegmatites, which contain high-grade tantalum mineralization. The Wodgina processing plant produces primary tantalum concentrate grading between 8 percent and 19 percent Ta_2O_5 , which is transported to

Greenbushes for secondary processing (Sweetapple and Collins, 2002; Global Advanced Metals Pty Ltd., 2013d).

Galaxy Resources Ltd. of Australia owns the Mt. Cattlin Mine, which is located about 2 km north of Ravensthorpe in Western Australia and has a production capacity of about 25 t/yr of Ta₂O₅. Tantalum ore from Mt. Cattlin is initially processed at the Greenbushes secondary processing plant (Global Advanced Metals Pty Ltd., 2013a).

In Brazil, tantalum production comes largely from the Volta Grande and the Pitinga deposits. At Volta Grande in southern Minas Gerais State, a field of large pegmatites is associated with early Proterozoic granite along the southern margin of the Archean São Francisco Craton. The pegmatites are zoned and contain abundant spodumene. The Volta Grande Mine produces ceramic feldspar, niobium, tantalum, and tin. The tantalum capacity of the Volta Grande Mine is about 25 t/yr of tantalum concentrate. At the Pitinga deposit in Central Amazonas State in northern Brazil, Paleoproterozoic volcanics of the Iricoume Group and Urupi Formation are intruded by granite plutons of the Madeira Suite, including the Madeira and the Agua Boa plutons. The granite plutons have Rapikivi and biotite granite phases as well as significant metasomatic and hydrothermal alteration. The Pitinga Mine, which is operated by Mineração Taboca S.A., has an annual capacity of about 91 t of Ta₂O₅ (180 t of tantalum concentrate). The company mines columbite ore at the mine and produces a ferroniobiumtantalum alloy that contains 45 percent niobium, 25 percent iron, and 4.2 percent tantalum and is used as a raw material in the production of niobium and tantalum oxide (Lagache and Quéméneur, 1997; Borges and others, 2009; Pohl, 2013; Mineração Taboca S.A., 2013).

The Tanco deposit, which was a leading producer of tantalum from 1969 to 1982 and has a history as a smaller producer since then, is located in southeastern Manitoba Province, Canada. At Tanco, tantalum has been produced from several zones within a pegmatite. Recently, the capacity of Tanco has been about 80 t/yr of Ta₂O₅ (Thomas and Spooner, 1988).

Central Africa—specifically Burundi, Congo (Kinshasa), and Rwanda—was the source of more than 40 percent (more than 300 t) of world primary tantalum production in 2011. In recent years, tantalum and tin have been mined from alluvial and eluvial deposits; however, in the past, lode deposits were mined. The lode deposits are principally quartz veins and pegmatites associated with a series of late- to post-orogenic granites that intrude the Kibara belt, which extends from Katanga Province and Kivu Province in Congo (Kinshasa) into parts of Burundi, Rwanda, and Tanzania, as well as Maniema Province in Congo (Kinshasa). Many of the pegmatites are thought to be small deposits; however, a large zoned pegmatite has been identified at Manono (Pohl, 1994; Kokonyangi, 2004; Dewaele and others, 2010).

The Yichun tantalum-niobium-lithium mine is hosted by a small body of topaz-lepidolite granite that is a fractionated phase of the Yashan batholith in Jiangxi Province, China. The Yichun deposit is the best known of China's tantalum deposits. In Fujian Province, the Nanping pegmatite field also hosts tantalum-niobium-tin mineralization (Yin Lin and others, 1995; Yueqing and Wenying, 1995).

In 2012, Gippsland Ltd. of Australia held 50 percent interest in the Abu Dabbab tantalum-tin deposit in joint-venture with the Egyptian Mineral Resources Co. (50 percent), which is located 770 km south of Cairo (Petra Capital Pty Ltd., 2012, p. 6). Also in 2012, resources at Abu Dabbab were estimated to be 44.5 million metric tons (Mt) at an average grade of 250 grams per metric ton (g/t) Ta₂O₅ and 90 g/t tin (Petra Capital Pty Ltd., 2012, p.12). Abu Dabbab is a fine-grained cassiterite and niobium-containing tantalite deposit hosted in altered granitic rocks. The ore zone is about 400 meters (m) long and 200 m wide and has a depth of 400 m from the maximum surface elevation (Petra Capital Pty Ltd., 2012, p. 12–13). The deposit is controlled by a northwest-trending shear zone and intersecting north-east structures. The deposit is expected to produce about 420 t of Ta₂O₅ in 2016

(Petra Capital Pty Ltd., 2012, p. 3). In 2010, Gippsland signed an offtake agreement with H.C. Starck GmbH of Germany, which included the purchase of about 300 t/yr of contained Ta_2O_5 for a period of 10 years (Petra Capital Ltd., 2012, p. 5). Each of the two companies in the joint-venture also held ownership (50 percent each) in the Nuweibi tantalum-tin-feldspar deposit. Indicated and inferred mineral resources at Nuweibi were estimated to be 98 Mt at average grades of 143 g/t Ta_2O_5 and 92 g/t niobium (Petra Capital Pty Ltd., 2012, p. 4). The company expected to produce of about 52 t of Ta_2O_5 in 2015 and 427 t of Ta_2O_5 in 2016 (Petra Capital Pty Ltd., 2012, p. 4).

The Kenticha Mine, which is operated by Ethiopian Mineral Development Share Co. (EMDSC), had an annual capacity of about 90 t of tantalum (which could produce 200 t/yr of tantalite concentrate grading 45 to 60 percent Ta_2O_5). The open pit mine is located about 550 km south of Addis Ababa and is hosted by the Kenticha pegmatite field, which is granitic pegmatite that covers an area of about 2,500 square kilometers (km^2). At Kenticha, the tantalum-bearing pegmatite deposit is exposed in an area that is more than 2 km long and 400 to 700 m wide (Mining Journal, 2011, p. 8; Geological Survey of Ethiopia, 2012, p. 3). The project produces tantalum concentrates composed of columbite-tantalite and other tantalum oxides. In February 2013, EMDSC (through its subsidiary Iris Mining Plc) and its strategic tantalum partner H.C. Starck submitted an Expression of Interest to the Privatization and Public Enterprises Supervising Agency to further develop the Kenticha Mine. Under the proposal, the companies would increase the tantalum reserves, create 12,000 jobs directly and indirectly, and produce high-end products, such as 99-percent-purity tantalum pentoxide powder and capacitor-grade tantalum powder (Business Wire, 2013). The EMDSC envisioned production of 600 t/yr of tantalite-columbite concentrate; however, no further details as to when these developments might take place were available. The company expected to add hundreds of tons of production from artisanal mines and local cooperatives (Elenitlo Minerals & Mining, 2013).

Noventa Ltd. of the United Kingdom through its subsidiary Highland African Mining Co. Ltd. operated the Marropino niobium and tantalum mine, which is located about 350 km northeast of Quelimane, Zambezia Province, Mozambique. The mine had an annual production capacity of about 140 t of contained Ta_2O_5 . The company's project is hosted by the Marropino pegmatite, which is a zoned lithium-rare-metal pegmatite of the lithium-cesium-tantalum family. The Marropino deposit is exposed for a strike length of about 800 m and a width of about 200 m. The company reported that there is an increase in the tantalum grade toward the center of the deposit. The known mineralization at Marropino is limited to the current area of mining and processing. As of 2010, indicated mineral resources at Marropino were estimated to be 7.40 Mt at an average grade of 223 g/t Ta_2O_5 (Hains and Mounde, 2010, p. 3, 5). In 2010, Noventa signed a 3-year offtake agreement with H.C. Starck for the sale of a substantial portion of its projected production of tantalum concentrate. During 2010, Noventa began shipment of material from the Mozambican Port of Quelimane to Nacala, Thailand, and to the United States (Noventa Ltd., 2011, p. 10, 12).

In Russia, tantalum has been mined at the Lovozerskoye deposit on the Kola Peninsula and the Etykinskoye deposit of the Zabaykalskiy mining and beneficiation complex from a massif of nepheline syenite that is enriched in elements, including beryllium, lithium, niobium, tantalum, thorium, rare-earth elements, zirconium, and volatiles, such as chlorine and fluorine. The combined capacity of these two deposits is estimated to be about 10 t/yr of tantalum ore (Smirnov, 1977).

Tantalum Processing Plants

As of 2012, at least 10 international companies were engaged in some stage of post-mining tantalum production. Tantalum refiners included Advanced Metallurgical Group N.V. of the Netherlands; GAM of Australia; H.C. Starck of Germany; and Chinese companies

Congua Tantalum & Niobium Smelter, Jiangxi Tungsten Group Limited Corp., King-Tan Tantalum Industry Ltd., and Ningxia Non-Ferrous Metal Smelter. Tantalum fabricators included Austrian companies Plansee SE and Treibacher Industrie AG; Heraeus Holding GmbH of Germany, and U.S. companies KEMET Blue Powder Corp. and Molycorp Inc.

Figure 5 shows the locations of significant tantalum fabricators and refineries. The fabricators and refineries are identified in table 3, along with each facility's annual capacity, facility type, ownership, and so forth. The numbers used to identify locations in figure 5 are keyed to the "ID" in table 3.

In January 2012, GAM completed the acquisition of the supermetals business of Cabot Corp. of Boston, Massachusetts, which included tantalum-processing plants in Boyertown, Pennsylvania, and Aizu, Japan. The company integrated the two processing plants with its existing mining and processing operations in Australia. GAM produces tantalum capacitor powders and metallurgical products at its Boyertown plant. Tantalum is often alloyed with tungsten, which improves its mechanical properties and strength but retains the fabricateability of pure tantalum. GAM's tantalum metallurgical products, which may be produced as foil, sheet, plate, wire, rod, tube, and metallurgical-grade powder, include tungsten alloy containing 2.5 percent tantalum and tungsten alloy containing 10 percent tantalum. The company's primary tantalum concentrate supply was the Wodgina Mine in northwestern Western Australia (Global Advanced Metals Pty Ltd., 2012; 2013 a–c; Roskill Information Services Ltd., 2012).

In February 2012, the capacitor manufacturer KEMET Corp. of Greenville, South Carolina, signed an agreement to acquire Niotan Inc. of Carson City, Nevada, which had been a significant supplier of tantalum powder to KEMET for several years. The Niotan tantalum fabrication facility was renamed KEMET Blue Powder. KEMET reported the acquisition to be part of its strategy to secure and stabilize its supply of tantalum raw material. In March 2012, the company also reported exclusive rights to secure raw material from Tantalite Resources of South Africa, which is a new supplier that would process conflict-free ore from the Kisenge Mine in Katanga Province in Congo (Kinshasa) (KEMET Corp., 2012a, c; Roskill Information Services Ltd., 2012).

In 2011, Molycorp Inc. of Greenwood Village, Colorado, acquired a 90 percent interest in the AS Silmet facility located in Sillamae, Estonia; this facility is one of the leading producers of tantalum metal in Europe. The processing plant manufactures tantalum hydroxides, oxides, and metals (Molycorp Inc., 2011).

King-Tan Tantalum Industry Ltd. produces tantalum bars, carbides, ingots, oxides, and powders. King-Tan, which is located in Jiangxi Province, China, sells its products to domestic and international customers, including customers in Germany, Japan, Singapore, and the United States (King-Tan Tantalum Industry Ltd., 2009a, b).

Supply Chain for Tantalum

The tantalum supply chain begins with the mining of ore and ends with the manufacture of consumer products or goods. The supply chain includes the mines, smelters, and refineries identified in figures 3, 4, and 5 and tables 1, 2, and 3 and extends downstream to include fabricators and manufacturers of intermediate and consumer goods, of which the significant ones are identified in figure 5 and table 3. Any disruption along the supply chain can result in higher prices that could affect many industries and, potentially, the availability of final goods. Identifying connections between the raw materials and the downstream entities that produce products that contain tantalum is critical to mapping the supply chain and analyzing the likelihood of supply disruption.

Sources of tantalum include artisanal mining, conventional (surface and underground) mining operations, and the recovery of tantalum from slag from tin smelting operations and from scrap

recycling. Based on data from Roskill Information Services Ltd., mining operations accounted for about 74 percent of the tantalum supply in 2011, followed by 18 percent from scrap recycling and 8 percent from tin slags (Roskill Information Services Ltd., 2012). Conventional hard rock mines around the world include surface and underground mines in Australia, Brazil, Canada, and Russia. Production from Burundi, Congo (Kinshasa), and Rwanda is mostly from artisanal mining of placer deposits. After the extraction of the raw material, the ore is physically concentrated by gravity separation and then processed by a smelter and refinery to obtain refined products, which include tantalum metals, oxides, and powders. For example, portions of tantalum concentrate mined from the Kenticha, the Volta Grande (Fluminense), and the Maropino Mines were sent to H.C. Starck in Germany for refining into tantalum fabricated products, such as foils, ingots, plates, rods, sheets, and tubes, and tantalum powder and compounds, which included carbides and oxides.

Figure 6 shows examples of the relationships among selected tantalum producing mines or source materials, and processing facilities and their refined products for selected countries. Those entries for which the information given is speculative or uncertain are marked with a question mark. Figure 7 lists tantalum processing facilities in Japan along with the refined products they produce.

Tantalum Capacitors

One of the main uses of tantalum is in capacitors. Capacitors are used to store electrical charge for later use and are common to all types of electronic equipment, including that used in automobiles, cameras, computers, engine management systems, light-emitting diodes, and cell phones and other telecommunications equipment. The authors identified 25 companies engaged in the manufacture of tantalum capacitors: including Ningxia Orient Tantalum Industry Co. Ltd. of China; NEC TOKIN Corp. of Japan; Samsung Electro-Mechanics of the Republic of Korea; and U.S. companies AVX Corp., KEMET, and Vishay Intertechnology Inc. (fig. 8). As of 2012, leading tantalum capacitor producers included AVX, which accounted for about 30 percent of the total market value, KEMET, NEC TOKIN, and Vishay. AVX manufactures tantalum capacitors for automobile, aerospace, and medical applications (KEMET Corp., 2012a, c; Roskill Information Services Ltd., 2012; AVX Corp., 2013a).

Table 4 presents the location of the facilities at which AVX, KEMET, and NEC TOKIN manufacture tantalum capacitors. AVX and KEMET each have five manufacturing sites, and NEC TOKIN has seven sites. All three companies have facilities in geographically diverse areas.

AVX produces about 10 different series of capacitors, which are used in a variety of aerospace, medical, and military applications (table 5). KEMET's product list includes 85 capacitor series. Series differ based upon a number of characteristics, including composition of the capacitor, electrical characteristics, reliability, the temperature at which they will operate, and how they may be mounted in a product (table 6).

Clearly, there are a large number of manufacturers, facilities, and types of capacitors. The large number of producing companies, manufacturing facilities, and types of capacitors contributes to the complexity of estimating the probability of a disruption of the supply of final goods that contain Ta-bearing capacitors. One would need to understand the relationship between manufacturing facilities and the types of capacitors they produce to evaluate the likelihood that a disruption at a plant might disrupt production of final goods that use a particular type of capacitor. Further, one would need to know if the type of capacitor used in a particular product could be replaced by one of the many other types of capacitors. The large number of potential combinations of plants, capacitor types, and potential substitution between types of capacitors makes estimation of the probability of disruption of a supply chain at the stage of capacitor manufacture a daunting task.

Discussion and Conclusions

The present investigation of the supply chain of tantalum, although only partial with regard to the products that use or depend on tantalum, the facilities that manufacture tantalum-containing products, and which products can substitute for one another, demonstrates several important points and provides some perspectives concerning the strategies that might be employed to map supply chains. First, supply chains, when considered in their entirety (from material in the earth to the final consumer product), are incredibly complex, and reducing this complexity to a manageable level requires clearly defined questions that partition the complex supply chain into manageable parts. For example, questions about how a disruption in the supply of a key input may affect the availability of end products that use that input will be quite different than questions about what is the likelihood that a particular good could suffer a particular supply disruption. In the former case, the level of complexity at the beginning of the supply chain (mining and initial processing of mineral material) is relatively limited, as mining and mineral processing sites are relatively few and knowable. The number of final goods, their component parts, and the facilities in which they are manufactured is considerably larger, however. If supply chain disruption is approached from the end of the chain—that is, if one wants to know what is the likelihood that there will be a disruption in the availability of a particular final good—the number of final goods one must analyze is reduced but the number of initial mineral materials that must be considered will be large. Although one may limit the complexity by focusing on one part of the chain based upon the question asked, the complexity in other parts of the supply chain may not be reduced. Defining the question clearly still may not reduce some types of complexity, such as the number of particular products and the extent to which they can substitute for one another. A supply chain “map,” then, must be designed to answer particular questions, and those questions will determine the level of detail that the supply chain map needs to contain to answer the questions. This is very much analogous to the approach used with topographic and geologic maps, which, depending on the scale of the map, contain more or less detail about land forms and geology of the mapped entity. To determine the likelihood that the supply chain of a particular product could be disrupted, a very detailed analysis of the supply chain involving all materials and their subsequent transformations and potential substitutes is necessary. Such an analysis is expensive to perform and can become obsolete if part of the production process for that good changes, and so, a detailed map of a supply chain is usually not available. The question then becomes at what ‘scale’ a supply chain map can be prepared that will be of use in evaluating the vulnerability of supply chain disruption without fully mapping the chain.

In the case of tantalum, there are a few mines that produce tantalum minerals; however, those mines supply several processing facilities, directly or through traders. Refined mineral products are further processed to make chemicals, metals (or alloys), or simply a more-refined mineral (that is, greater purity and (or) more controlled physical properties, such as particle size). Metals and chemicals can go through several steps while being incorporated into a product, and the number of facilities involved often increases. So, tantalum starts with a few facilities (mines), passes through a complex web of facilities, and then becomes incorporated in a large number of products. The increasing number of facilities, material paths, and buyer-seller needs (as they relate to material requirements) result in greater complexity as one moves down the supply chain from mining to consumer product.

At some point in the supply chain, material requirements are replaced by performance criteria, which further complicates analysis. Take, for example, the large number of tantalum capacitors described in the capacitor section of this report. Looking backwards through the supply chain (that is, from product to material source) is a useful way to analyze risk. Bear in mind, however, that not all supply paths are connected or overlap. Materials in the early part of the supply chain (for example, minerals) have more possible uses than materials at the end of the supply chain (for example, cell

phones and turbine engines). As a result, a supply disruption at the beginning of the supply chain can have a broader effect as material changes paths among processing facilities than would a supply disruption at the downstream end of the supply chain. On the other hand, a downstream interruption affects fewer products. It is possible that certain products depend on materials that follow a path through one facility, making that facility critical to that product; that is, a “pinch point” in the supply chain.

Many supply chain maps produced to date have focused on the front end of the chain; that is, the extraction of mineral materials and their initial processing, and provide a list of final goods that may contain those materials (European Commission Enterprise and Industry Directorate, 2010). Such an approach typically focuses on the degree of concentration of the production of mineral materials. This is useful for identifying those materials that are more likely to be subject to disruption. These maps, however, provide only very general information about the downstream parts of the supply chain. What is needed is information that could be applied to a number of different end products. One such approach would be to gather information on key technologies that are used in a large number of final goods. This approach still entails considerable work as the situation with tantalum-containing capacitors demonstrates. It can, however, provide information on the downstream parts of the supply chains of a large number of final goods. It can also map which products are connected to which mines through which processing facilities.

Another issue is how best to present information about material flow that is useful in identifying risk and is understandable. In this report, maps show geographic facility location and charts show connections between producers and in the supply chain that may be linked by ownership, investment connection, and (or) purchase contracts.

Other factors that contribute to supply risk but that are not included in this report are commercial infrastructure (for example, competent manpower, electrical power supply, and transportation) and good governance (for example, the legal infrastructure and the business friendly nature of the geographic area).

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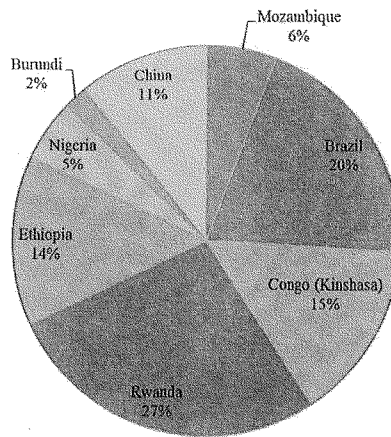


Figure 1. Chart showing percentage of mined tantalum produced in the world in 2011, by country. The amount of contained tantalum in the ore totaled 706 metric tons. Data are from Mobbs (2012), Papp (2013), Tse (2013), and Yager (2013a–c).

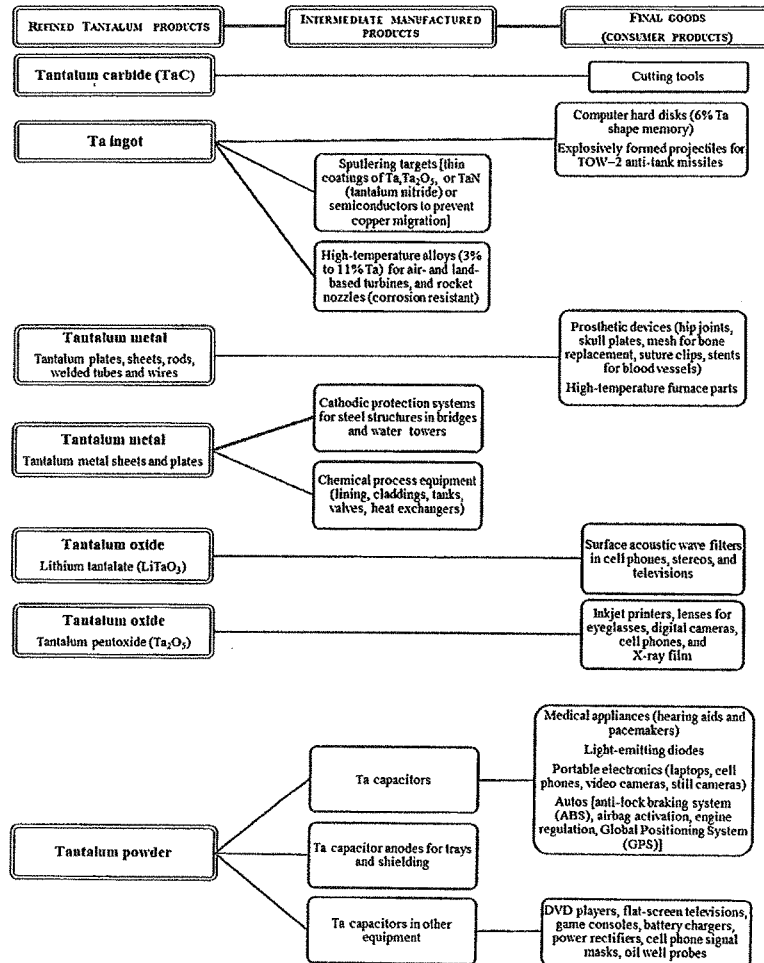
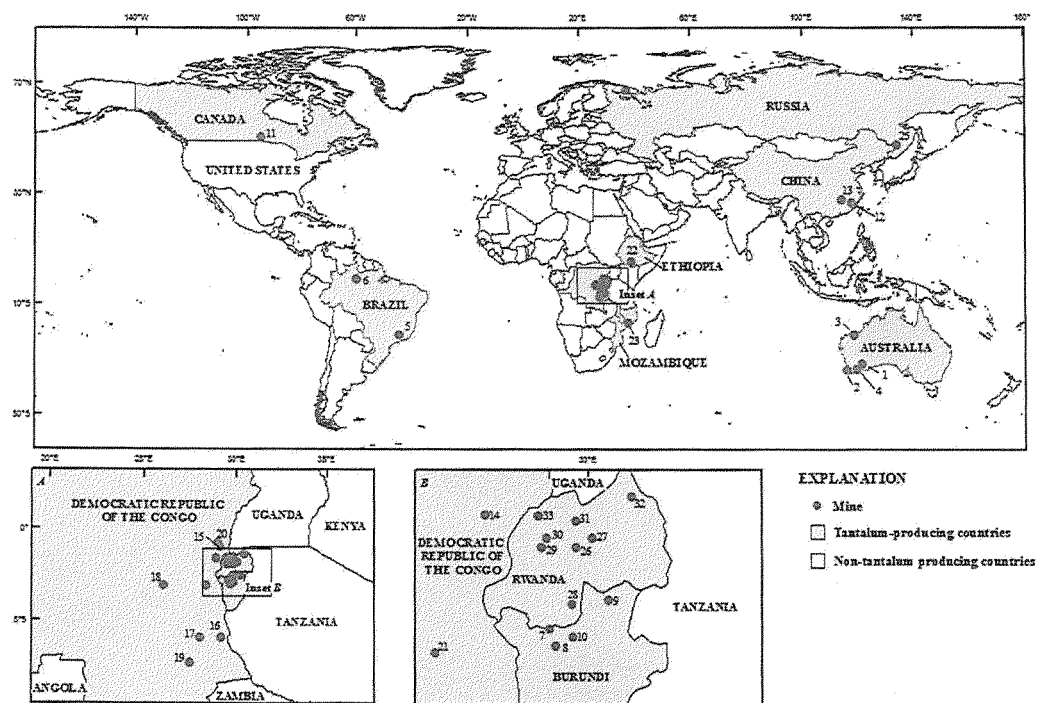


Figure 2. Chart showing refined tantalum (Ta) products, intermediate products manufactured from them, and the final goods produced (British Geological Survey, 2011; Tantalum-Niobium International Study Center, 2013).



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Figure 3. Significant tantalum (Ta) mines in the world. Insets A and B show the location of Ta mines in Burundi, the Democratic Republic of the Congo [Congo (Kinshasa)], and Rwanda in detail. The numbers used to identify locations are keyed to the "ID" in table 1.

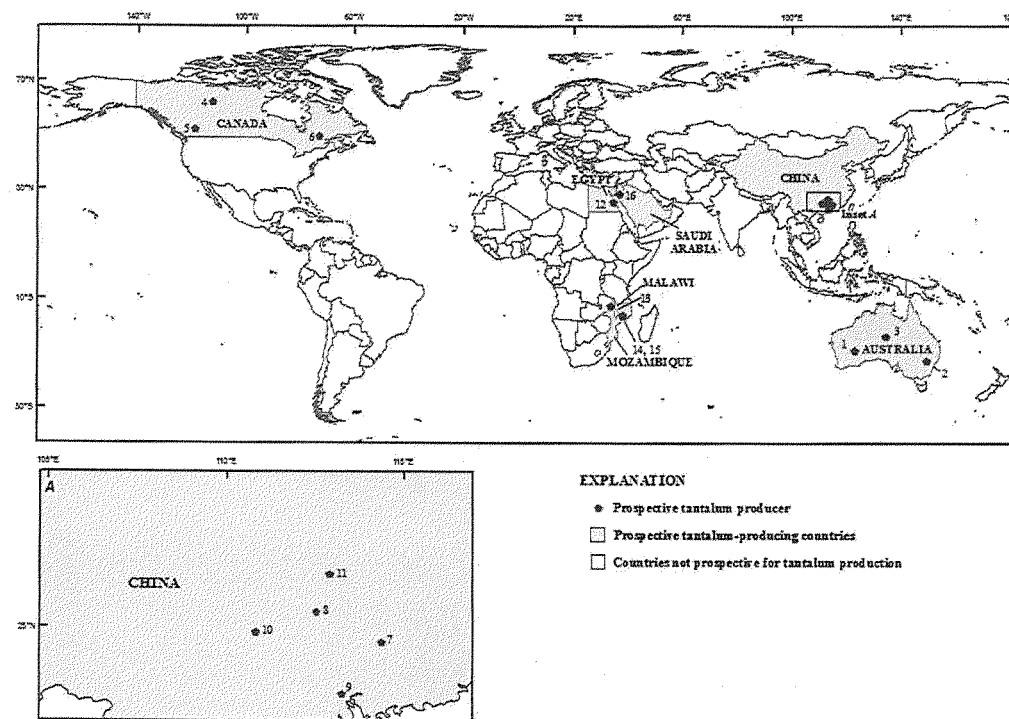


Figure 4. Prospective tantalum (Ta) producers in the world. Inset A shows the locations of prospective producers in China in detail. The numbers used to identify locations are keyed to the "ID" in table 2.

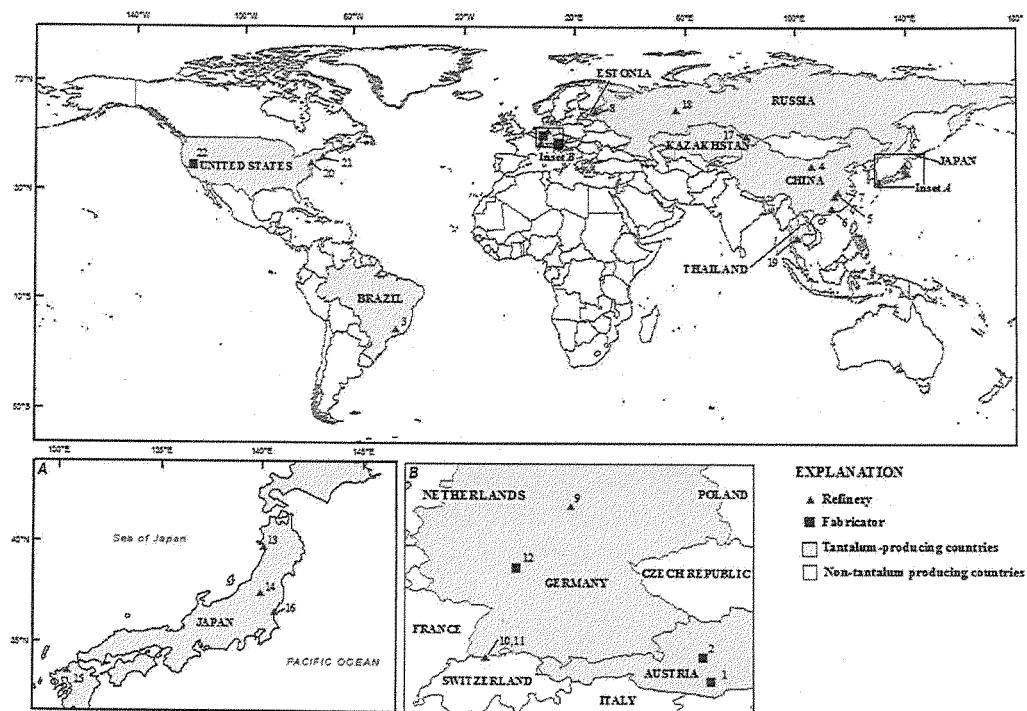
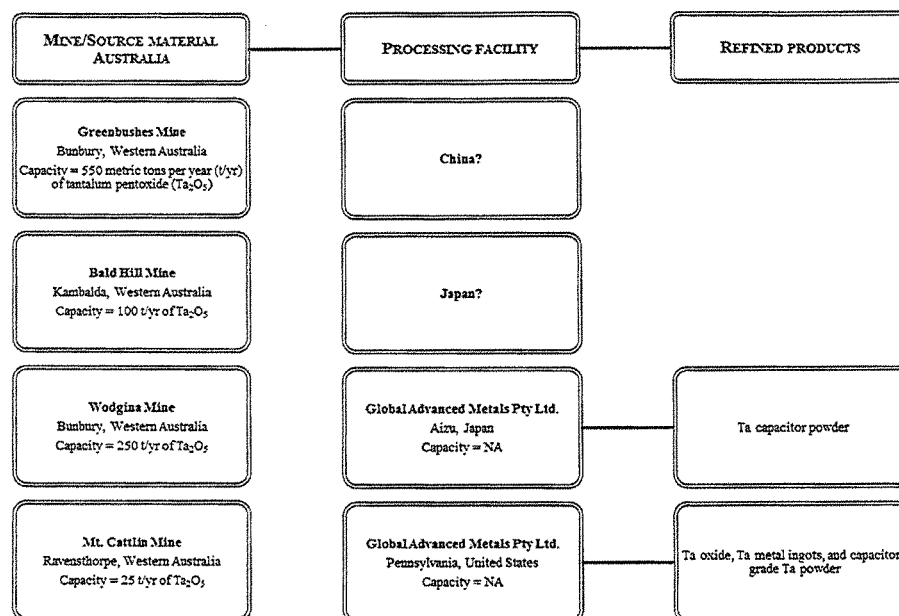


Figure 5. Significant tantalum (Ta) fabricators and refineries in the world. Inset A shows the locations of Ta refineries in Japan in detail. Inset B shows the locations of Ta fabricators and refineries in Austria and Germany in detail. The numbers used to identify locations are keyed to the "ID" in table 3.

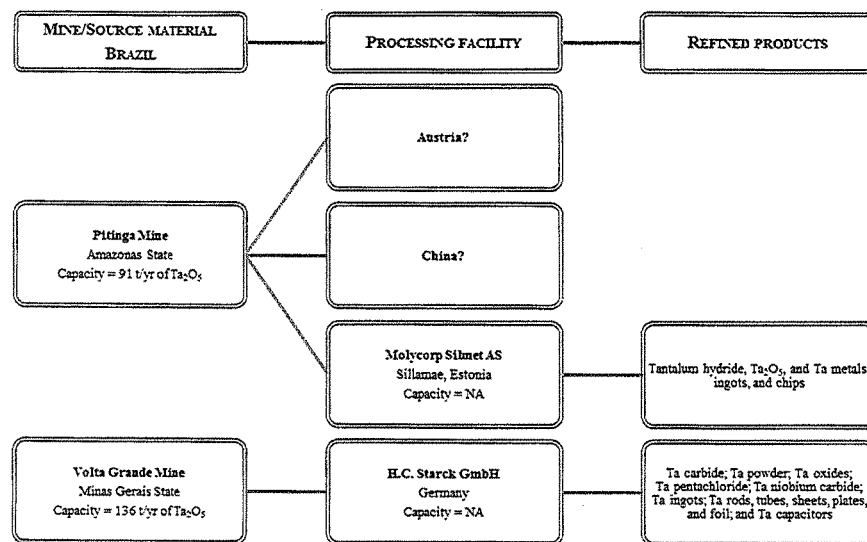
A



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Figure 6. Chart showing the relationship of selected tantalum (Ta) mines (or source materials) and processing facilities and their refined products for mines or deposits located in A, Australia; B, Brazil; C, Burundi; D, Canada; E, China; F, Democratic Republic of the Congo [Congo (Kinshasa)]; G, Egypt; H, Ethiopia; I, Mozambique; J, Thailand; K, Russia; and L, Rwanda. A question mark after the entry indicates a probable location. Abbreviations for compounds and other terms are defined at first use in the figure. For Burundi, * indicates combined capacity. For Thailand, the Ta production capacity was estimated based on tin slag smelting operations in the country.

B



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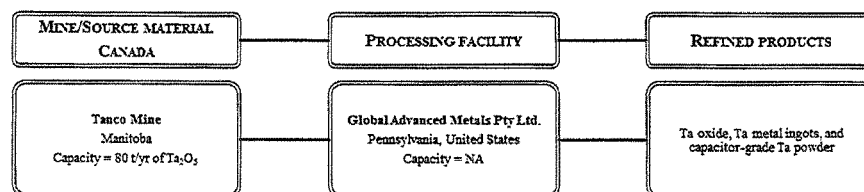
Figure 6.—Continued

C

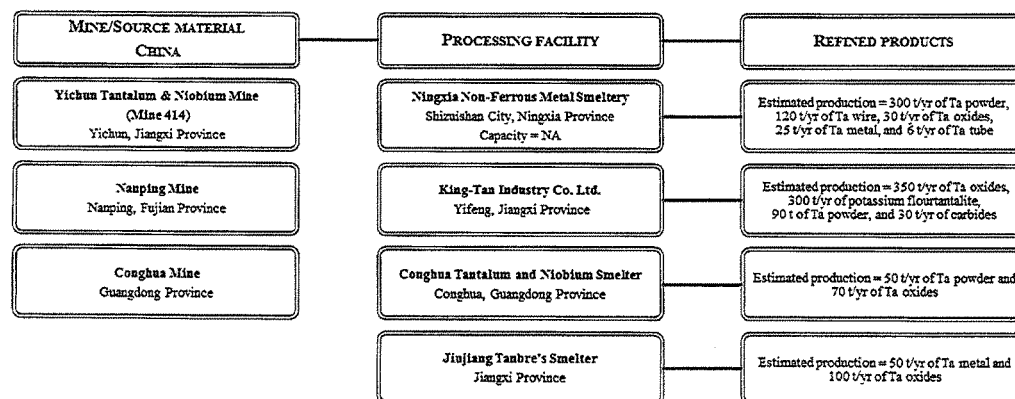
MINE/SOURCE MATERIAL BURUNDI
<p>Mine at Kabarore Kabarore, Kayanza Province Estimated capacity = 6 t/yr of columbium (Nb), Ta, and columbite-tantalite ore and concentrate</p>
<p>Mines at Kayanza Province* Kayanza Province Estimated capacity = 160 t/yr of Nb, Ta, and columbite-tantalite ore and concentrate</p>
<p>Mines at Kirundo Province* Kirundo Province Estimated capacity = 160 t/yr of Nb, Ta, and columbite-tantalite ore and concentrate</p>
<p>Mines at Ngozi Province* Ngozi Province Estimated capacity = 160 t/yr of Nb, Ta, and columbite-tantalite ore and concentrate</p>

Figure 6.—Continued

D



E



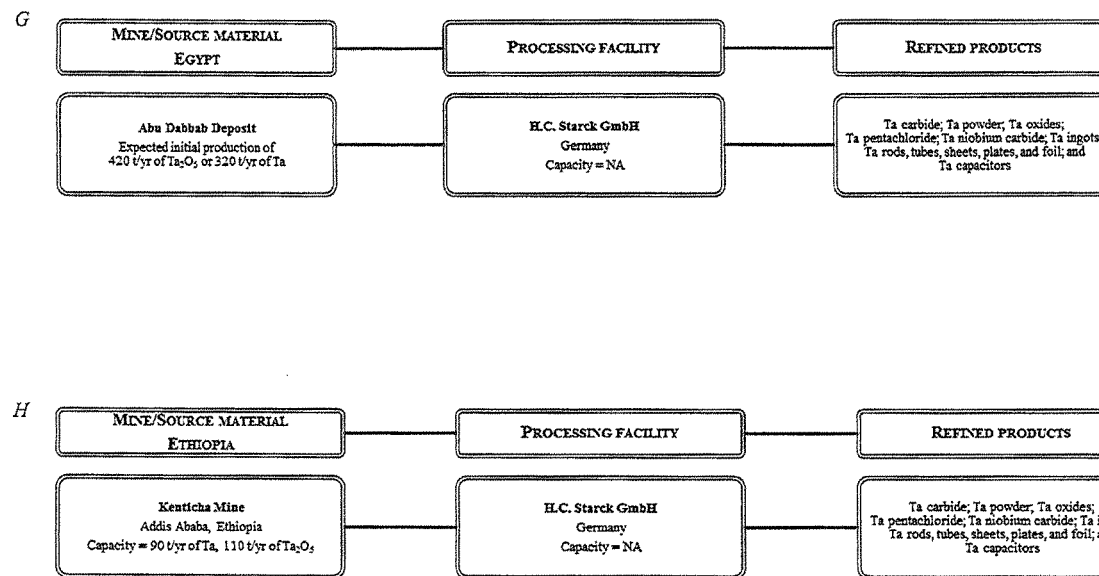
340

Figure 6.—Continued

F

MINE/SOURCE MATERIAL CONGO (KINSHASA)
Bibatama Mine Bibatama in Nord-Kivu Province Capacity = 120 t/yr of Nb and Ta concentrate
Lueshe Mine North Kivu Province Capacity = 1,440 t/yr of pyrochlore
Mines at Kalemie Territory Kalemie, Katanga Province Estimated capacity = 130 t/yr of columbite-tantalite
Mines at Nyunzu Territory NuNyunzu, Katanga Province Estimated capacity = 130 t/yr of columbite-tantalite
Mines at Maniema Maniema, Nord-Kivu Province Capacity = NA
Mines at Manono Territory Manono, Katanga Province Estimated capacity = 100 t/yr of columbite-tantalite
Mines at Nord-Kivu Nord-Kivu Province Capacity = NA
Mines at Sud-Kivu Sud-Kivu Province Capacity = NA

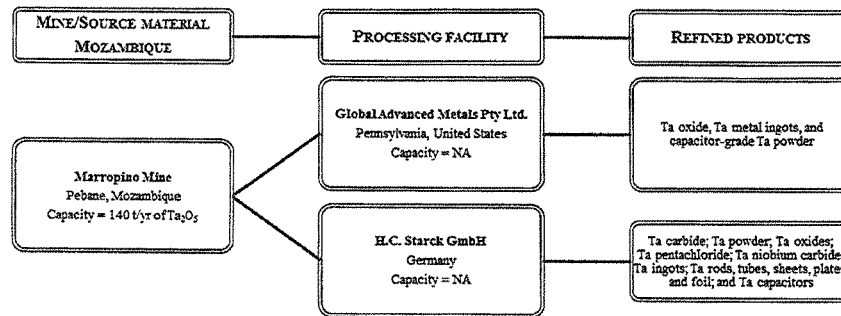
Figure 6.—Continued



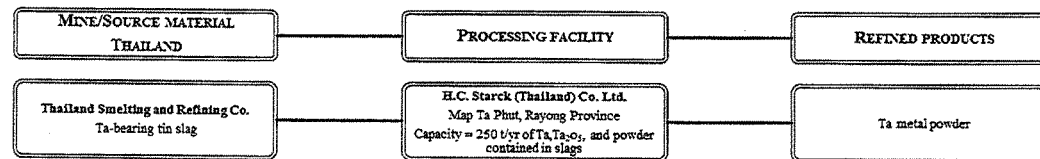
342

Figure 6.—Continued

I



J



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Figure 6.—Continued

K

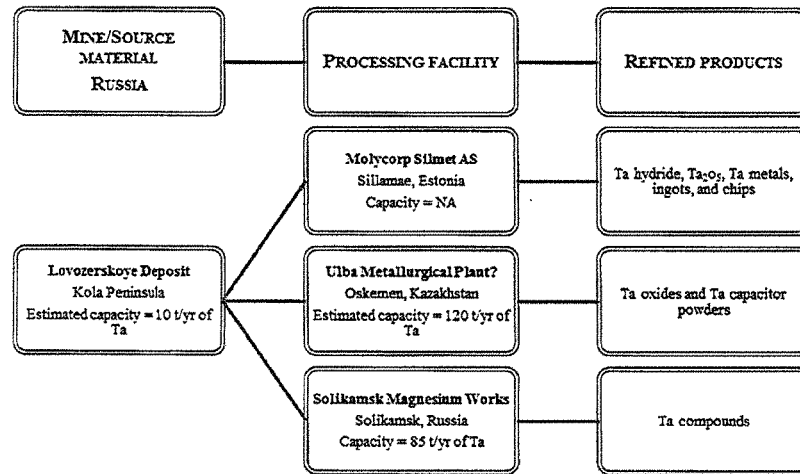


Figure 6.—Continued

L

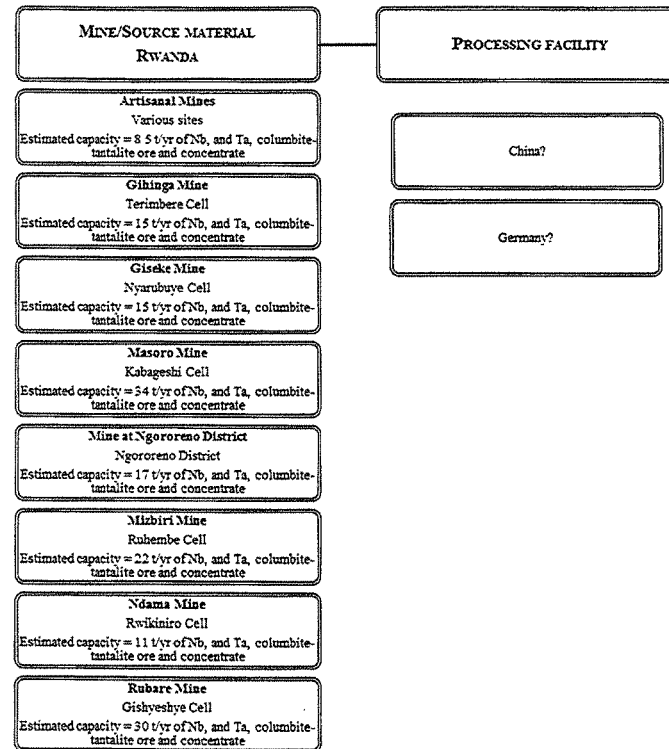


Figure 6.—Continued

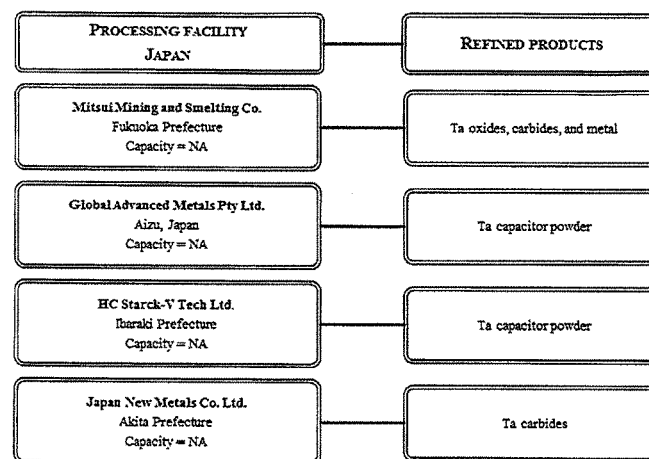


Figure 7. Chart showing tantalum (Ta) refineries in Japan and their products.

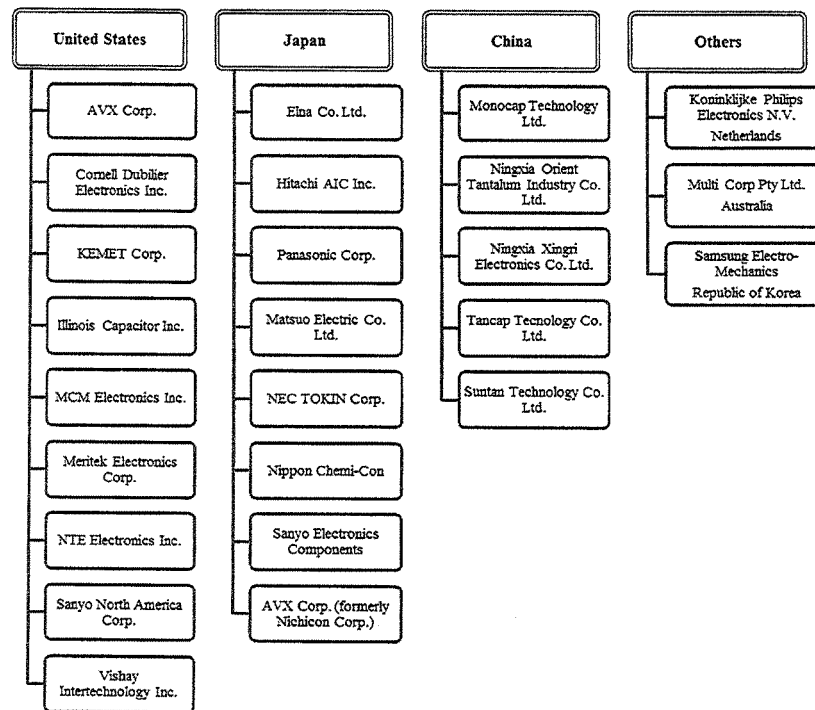


Figure 8. Chart showing selected tantalum capacitor manufacturers.

Table 1. Significant tantalum mines.

[Mine locations are shown on the map in figure 3. --, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
1	2011	Tantalum, tantalite, Ta ₂ O ₅	Australia	60 km southeast of Kambalda, Western Australia	Bald Hill tantalite mine	M	SU	Altura Mining Ltd., 100%	100 Ta ₂ O ₅	CM	-31.672	121.894	SL
2	2011	Tantalum, tantalite, Ta ₂ O ₅	Australia	250 km from Perth	Greenbushes open pit/underground tantalite-spodumene mine	M	SU	Global Advanced Metals Pty Ltd., 80% and Traxys Tantalum LP (Traxys Group), 20%	550 Ta ₂ O ₅	A	-33.857	116.051	SL
3	2012	Tantalum, tantalite, Ta ₂ O ₅	Australia	2 km north of Ravensthorpe	Mt. Cattlin Mine	M	S	Galaxy Resources Ltd.	25 Ta ₂ O ₅	A	-33.582	120.048	GL
4	2011	Tantalum, tantalite, Ta ₂ O ₅	Australia	100 km southeast of Port Hedland	Wodgina open pit tantalite mine	M	SU	Global Advanced Metals Pty Ltd., 80%, and Traxys Tantalum LP (Traxys Group), 20%	250 Ta ₂ O ₅	CM	-21.184	118.671	SL
5	2011	Tantalum, concentrate	Brazil	Fluminense Mine, Minas Gerais State	Fluminense Mine (Volta Grande Mine)	M	S	Companhia Industrial Fluminense (AMG Advanced Metallurgical Group N.V.)	25 concentrate	A	-21.084	-44.583	SL
6	2011	Tantalum, concentrate	Brazil	Pitinga Mine, Amazonas State	The Pitinga Mine	M	S	Mineração Taboca S.A. (private, 100%)	180 concentrate	A	-0.784	-60.079	SL
7	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Burundi	Kabarore, Kayanza Province	Mine at Kabarore	M	--	Comptoir Minier des Exploitations du Burundi S.A. (COMEBU)	6*	A	-2.824	29.581	GL

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Table 1. Significant tantalum mines.—Continued

[Mine locations are shown on the map in figure 3. --, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
8	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Burundi	Kayanza Province	Mines at Kayanza Province	M	--	Artisanal miners	160 ^{e,1}	A	-3.010	29.656	GL
9	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Burundi	Kirundo Province	Mines at Kirundo Province	M	--	Artisanal miners	160 ^{e,1}	A	-2.504	30.223	GL
10	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Burundi	Ngozi Province	Mines at Ngozi Province	M	--	Artisanal miners	160 ^{e,1}	A	-2.918	29.837	GL
11	2011	Tantalum, tantalite, Ta ₂ O ₅	Canada	Bernie Lake, Manitoba	Tanco Mine	M	S	Cabot Corp., 100%	80 Ta ₂ O ₅	CM	50.433	-95.450	SL
12	2012	Tantalum	China	Nanping, Fujian Province	Xikeng Mine	M	U	--	NA	A	26.600	118.042	GL
13	2012	Tantalum	China	Yichun, Jiangxi Province	Yichun Tantalum & Niobium Mine	M	S	China Minmetals Corp., Jiangxi Rare Earth Metal and Rare Metals Tungsten Group Co. Ltd.	NA	A	27.649	114.518	GL

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Table 1. Significant tantalum mines.—Continued

[Mine locations are shown on the map in figure 3. --, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
14	2010	Niobium (columbium) and tantalum	Congo (Kinshasa)	Bibatama in Nord-Kivu Province	Bibatama Mine	M	--	Mwanguchuchu Hizi International	120 concentrate	A	-1.579	28.891	GL
15	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Lueshe Mine	Fluminense Mine (Volta Grande Mine)	M	--	Société Minière du Kivu (Simikivu) [GE Metalle und Materialien GmbH, 70%]	1,440 pyrochlore	S	-0.987	29.141	SL
16	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Kalemie, Katanga Province	Mines at Kalemie Territory	M	--	Artisanal miners and small-scale miners	130 ⁰ columbite-tantalite ²	A	-5.935	29.180	GL
17	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Nyunzu, Katanga Province	Mine at Kabare	M	--	Artisanal miners and small-scale miners	130 ⁰ columbite-tantalite ²	A	-5.943	28.014	GL
18	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Maniema, Nord-Kivu Province	Mines at Maniema	M	--	Artisanal miners and small-scale miners	--	A	-3.073	26.041	GL
19	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Manono, Katanga Province	Mines at Manono Territory	M	--	Artisanal miners and small-scale miners	100 ⁰ columbite-tantalite	A	-7.309	27.464	GL
20	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Nord-Kivu Province	Mines at Nord-Kivu	M	--	Artisanal miners and small-scale miners	NA	A	-07.92	29.046	GL
21	2011	Niobium (columbium) and tantalum	Congo (Kinshasa)	Sud-Kivu Province	Mines at Sud-Kivu	M	--	Artisanal miners and small-scale miners	NA	A	-3.085	28.354	GL
22	2012	Tantalum, ore	Ethiopia	550 km south of Addis Ababa	Kenticha Mine	M	--	Elenito Mineral Development Share Co.	90 tantalum (current)	A (Expansion proposed by 2017)	5.454	39.017	SL

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Table 1. Significant tantalum mines.—Continued

[Mine locations are shown on the map in figure 3. —, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
23	2011	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Mozambique	350 km northeast of Quelimane, Zambezia Province	Marropino Mine	M	S	Novonta Ltd. (Highland African Mining Co. Ltd.)	140 Ta ₂ O ₅	A	-16.515	37.907	SL
24	2010	Tantalum, ore	Russia	Zabaykalskiy mining and beneficiation complex	Etykinskoye deposit	M	—	—	10 ⁶⁻³	A	47.560	134.720	GL
25	2010	Tantalum, ore	Russia	Lovozerkoye deposit [Kola Peninsula]	Lovozerkoye deposit [Kola Peninsula]	M	—	—	10 ⁶⁻³	A	67.333	37.000	GL
26	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Various Sites	Artisanal Mines	M	—	Artisanal miners	85 ^e	A	-1.940	29.874	GL
27	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Terimbere Celli	Gihinga Mine	M	—	KODUBU	15 ^e	A	-1.936	29.500	GL

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Table 1. Significant tantalum mines.—Continued

[Mine locations are shown on the map in figure 3. --, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
28	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Nyarubuye Cell	Giseke Mine	M	--	KUAKA	15 ^e	A	-2.552	29.829	GL
29	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Kabageshi Cell	Masoro Mine	M	--	Ets Munsad Minerals	34 ^e	A	-1.833	30.049	GL
30	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Ngororono District	Mine at Ngororono District	M	--	Gatumba Mining Concessions Ltd. (GMC) (Kivu Gatumba 36 Resources Ltd., 51%, and Government, 49%)	17 ^e	A	-1.651	29.871	GL
31	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Ruhembe Cell	Mizibiri Mine	M	--	EPROCOMI	22 ^e	A	-1.651	29.871	GL

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Table 1. Significant tantalum mines.—Continued

[Mine locations are shown on the map in figure 3. --, not applicable or no data; A, active; CM, care and maintenance; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
32	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Rwinkiro Cell	Ndama Mine	M	—	Vision Mining Co.	11 ^e	A	-1.387	30.473	GL
33	2012	Niobium (columbium) and tantalum, columbite-tantalite, ore and concentrate	Rwanda	Gishyeshye Cell	Rubare Mine	M	—	Ets Kalinda	30 ^e	A	-1.600	29.463	GL

¹Combined capacity of facilities corresponding to ID numbers 8 through 10 in this table.

²Combined capacity of facilities corresponding to ID numbers 16 and 17 in this table.

³Combined capacity of facilities corresponding to ID numbers 24 and 25 in this table.

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Table 2. Prospective tantalum deposits and producers in the world.

[Producer locations are shown on the map in figure 4. --, not applicable or no data; A, active; CM, care and maintenance; D, deposit; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; P₂O₅, phosphorus pentoxide; REO, rare-earth oxide; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground; UD, under development. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Tonnage (million metric tons)	Grade (parts per million)	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
1	Tantalum	Australia	35 km south of Laverton, Western Australia	Mount Weld	D	S	Lynas Corp. Ltd.	--	--	--	UD	-28.897	122.384	SL
2	Tantalum	Australia	Dubbo, New South Wales	Dubbo Zirconia Project	D	S	Australian Zirconia Ltd., 100% (Alkane Resources Ltd.)	73.2	0.03 Ta ₂ O ₅	600 Ta ₂ O ₅	A	-32.418	148.713	SL
3	Tantalum	Australia	135 km northwest of Alice Springs	Nolans Rare Earths Project	D	S	Arafura Resources Ltd., 100%	47	2.6% REO, 11% P ₂ O ₅	200 ^a Ta ₂ O ₅	A	-23.617	133.857	SL
4	Tantalum	Canada	100 km southeast of Yellowknife	Nechalacho Rare-Earth Element Deposit	D	U	Avalon Rare Metals Inc., 100%	14.5 (probable reserves)	400 Ta ₂ O ₅	--	UD	62.096	-112.489	SL
5	Tantalum	Canada	10 km north of Blue River	Blue River Tantalum-Niobium Project, Upper Fir Deposit	D	U	Commerce Resource Corp., 100%	36.35 (indicated)/ 6.40 Mt (inferred)	195 Ta ₂ O ₅ / 199 Ta ₂ O ₅	275 ^a Ta ₂ O ₅	UD	52.232	-119.169	SL
6	Tantalum	Canada	Crevier Township, Lac Saint-Jean Region	Crevier Deposit	D	SU	MDN Inc., 72.5%, and IAMGOLD, 27.5%	25.4 (measured and indicated)/ 15.4 (inferred)	234 Ta ₂ O ₅ / 252 Ta ₂ O ₅	100 ^a Ta ₂ O ₅	UD	49.500	-72.816	SL
7	Tantalum	China	Dajishan, Jiangxi Province	Dajishan Deposit	D	--	Lynas Corp. Ltd.	--	--	--	U	24.583	114.381	GL

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Table 2. Prospective tantalum deposits and producers in the world.—Continued

[Producer locations are shown on the map in figure 4. —, not applicable or no data; A, active; CM, care and maintenance; D, deposit; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; P₂O₅, phosphorus pentoxide; REO, rare-earth oxide; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground; UD, under development. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Tonnage (million metric tons)	Grade (parts per million)	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
8	Tantalum	China	Xianghualing, Hunan Province	Xianghualing Deposit	D	—	—	—	—	—	U	25.433	112.533	GL
9	Tantalum	China	Boluo, Guangdong Province	Boluo Deposit	D	—	—	—	—	—	U	23.132	113.267	GL
10	Tantalum	China	Limu, Guangxi Province	Limu Deposit	D	—	—	—	—	—	U	24.850	110.800	GL
11	Tantalum	China	Xiangdong, Hunan Province	Xiangdong Deposit	D	—	—	—	—	—	U	26.492	112.911	GL
12	Tantalum	Egypt	16 km inland from the western shore of the Red Sea	Abu Dabbab and Nuweibi project	M	S	Tantalum Egypt J.S.C. (Egyptian Company for Mineral Resources 50%, and Tantalum International Pty Ltd., 50% (Gippsland Ltd.))	44.5	250 Ta ₂ O ₅	420 Ta ₂ O ₅	UD	49.500	-72.816	SL
13	Tantalum	Malawi	150 km from Malawi City, Lilongwe, Mzimba District	Kanyika Niobium Project	D	S	Globe Metals & Mining	60	—	—	UD	-12.813	33.460	SL
14	Tantalum	Mozambique	Zambozia Province	Morua Mine	D	S	Noventa Ltd. (Highland Africa Mining Co. Ltd.)	4.6 (indicated)/ 3.1 (inferred)	—	—	CM	-16.270	37.866	SL

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Table 2. Prospective tantalum deposits and producers in the world.—Continued

[Producer locations are shown on the map in figure 4. —, not applicable or no data; A, active; CM, care and maintenance; D, deposit; e, estimated; GL, general location; km, kilometer; M, mine; NA, not available; P₂O₅, phosphorus pentoxide; REO, rare-earth oxide; S, surface/open pit; SL, specific location; SU, surface/open pit and underground; Ta₂O₅, tantalum pentoxide; U, underground; UD, under development. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Mining method	Ownership	Tonnage (million metric tons)	Grade (parts per million)	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
15	Tantalum	Mozambique	Zambezia Province	Mutala Mine	D	S	Noventa Ltd. (Highland Africa Mining Co. Ltd.)	—	—	—	CM	-15.930	37.912	SL
16	Tantalum	Saudi Arabia	Tabuk	Ghurayyah Tantalum-Niobium REE Project	D	—	Tertiary Minerals plc, 50%, AH Algosaihi Bros Co., 25%, and Al Nahla Trading & Contracting Co., 25%	400 (inferred)	245 Ta ₂ O ₅	275* Ta ₂ O ₅	S	28.375	36.527	GL

Table 3. Significant tantalum plants (fabricators and refineries).

[Locations of fabricators and refineries are shown on the map in figure 5. --, not applicable or no data; ?, uncertain; A, active; e, estimated; F, fabricator; GL, general location; NA, not available; P, plant; R, refinery; SL, specific location. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
1	2012	Tantalum	Austria	Althofen, Carinthia	Treibacher Industrie AG	P (F)	Treibacher Industrie AG	--	A	46.867	14.460	SL
2	2012	Tantalum	Austria	Liezen	PLANSEE Liezen	P (F)	Plansee SE, 100%	--	A	47.561	14.247	SL
3	2012	Tantalum	Brazil	Sao Joao del Rei, Minas Gerais	Companhia Industrial Fluminense	P (R)	Companhia Industrial Fluminense (AMG Advanced Metallurgical Group N.V.)	--	A	-21.084	-44.583	SL
4	2012	Tantalum	China	Ye Jin Road, Shizuishan City, Ningxia Province	Ningxia Non-Ferrous Metal Smelter	P (R)	Ningxia Non-ferrous Metal Smelter	300 ^t tantalum powder, 120 ^t tantalum wire, 30 ^t tantalum oxide, 25 ^t tantalum metal, 6 ^t tantalum tube	A	38.994	106.375	GL
5	2012	Tantalum	China	Shishi Industrial Zone, Yifeng, Jiangxi Province	King-Tan Tantalum Industry Ltd.	P (R)	King-Tan Tantalum Industry Ltd.	350 ^t tantalum powder, 120 ^t wire, 30 ^t oxide, 25 ^t tantalum metal, 30 ^t carbide	A	28.256	114.777	GL
6	2012	Tantalum	China	Conghua, Guangdong Province	Conghua Tantalum and Niobium Smelter	P (R?)	Conghua Tantalum & Niobium Smelter	50 ^t tantalum powder, 70 ^t tantalum oxide	A	23.548	113.587	GL
7	2012	Tantalum	China	Jiangxi Province	Jiujiang Tanbre's Smelter	P (R?)	Jiangxi Tungsten Group Limited Corp.	50 ^t tantalum metal, 100 ^t tantalum oxide	A	29.705	116.002	GL

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Table 3. Significant tantalum plants (fabricators and refineries).—Continued

[Locations of fabricators and refineries are shown on the map in figure 5. --, not applicable or no data; ?, uncertain; A, active; e, estimated; F, fabricator; GL, general location; NA, not available; P, plant; R, refinery; SL, specific location. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
8	2012	Tantalum	Estonia	Sillamäe	MolyCorp Silmet AS	P (R)	MolyCorp Inc., 90%	--	A	59.401	27.746	GL
9	2012	Tantalum	Germany	Im Schleek, Goslar	Goslar Plant	P (R)	H.C. Starck GmbH	--	A	51.909	10.474	SL
10	2012	Tantalum	Germany	Ferroweg, Laufenburg	Rhina Plant	P (R)	H.C. Starck GmbH	--	A	47.556	8.039	SL
11	2012	Tantalum	Germany	Sackinger Strasse, Laufenburg	ENAG Plant	P (R)	H.C. Starck GmbH	--	A	47.559	8.048	SL
12	2012	Tantalum	Germany	Hansau	Heraeus Material Technology GmbH & Co. KG	P (F?)	Heraeus Holding GmbH	--	A	50.131	8.925	SL
13	2012	Tantalum and niobium	Japan	Akita, Akita Prefecture	Akita	P (R?)	Japan New Metals Co. Ltd.	95% concentrate	A	39.760	140.065	GL
14	2012	Tantalum and niobium	Japan	Aizuwakamatsu-shi, Fukushima prefecture	Aizu Refinery Plant	P (R?)	Global Advanced Metals Pty Ltd.	--	A	37.460	139.936	GL
15	2012	Tantalum and niobium	Japan	Fukuoka prefecture	Miike Rare Metal	P (R)	Mitsui Mining and Smelting Co. Ltd.	NA	A	33.606	130.419	GL
16	2012	Tantalum and niobium	Japan	Hitachi-Ohmaiya, Ibaraki prefecture	H.C. Starck-V Tech Ltd.	P (R)	H.C. Starck GmbH	NA	A	36.506	140.615	GL
17	2012	Tantalum, metal	Kazakhstan	Oskemen (also known as Ust-Kamenogorsk)	Oskemen (also known as Ust-Kamenogorsk)	P (R)	Ulba Metallurgical Plant	NA	A	49.982	82.627	SL
18	2012	Tantalum	Russia	Solikamsk, Perm Krai	Solikamsk Magnesium Works	P (R)	Solikamsk Magnesium Works	85	A	59.634	56.767	GL

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Table 3. Significant tantalum plants (fabricators and refineries).—Continued

[Locations of fabricators and refineries are shown on the map in figure 5. --, not applicable or no data; ?, uncertain; A, active; e, estimated; F, fabricator; GL, general location; NA, not available; P, plant; R, refinery; SL, specific location. Data are from U.S. Geological Survey Minerals Yearbook 2011, vol. III (<http://minerals.usgs.gov/minerals/>)]

ID	Year	Specific mineral commodity and (or) product	Country	Location description	Location name	Facility type	Ownership	Annual capacity (metric tons)	Status	Latitude (decimal degrees)	Longitude (decimal degrees)	Locational accuracy
19	2012	Tantalum, metal powder and oxides	Thailand	Map Ya Phut, Rayong Province	H.C. Starck (Thailand) Company Ltd.	P (R)	H.C. Starck (Thailand) Company Ltd. (H.C. Starck GmbH, 94.98%, and others, 5.02%)	250 contained in slags	A	12.688	101.141	SL
20	2012	Tantalum	United States	Boyetown, Pennsylvania	Boyetown Plant	P (R)	Global Advanced Metals Pty Ltd.	--	A	40.346	-75.612	SL
21	2012	Tantalum	United States	Newton, Massachusetts	H.C. Starck Inc.	P (R)	H.C. Starck Inc.	--	A	42.311	-71.214	SL
22	2012	Tantalum	United States	Carson City, Nevada	KEMET Blue Powder Corp.	P (F)	KEMET Corp.	--	A	39.234	-119.657	SL

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Table 4. Locations of tantalum capacitor manufacturing facilities for three leading manufacturers.

[Sources: AVX Corp. (2013a), KEMET Corp. (2012b, d), and NEC TOKIN Corp. (2013)]

Manufacturing company	Tantalum capacitor manufacturing location
AVX Corp.	Adogawa, Japan (formerly Nichicon Corp.)
	Bidderford, Maine, USA
	Lanskroun, Czech Republic
	San Salvador, El Salvador
	Tianjin, China (formerly Nichicon Corp.)
KEMET Corp.	Carson City, Nevada, USA
	Cuidad Victoria, Mexico
	Evora, Portugal
	Matamoros, Mexico
	Suzhou, China (2 facilities)
NEC TOKIN Corp.	Sendai City, Miyagi, Japan
	Shiroishi City, Miyagi, Japan
	Nyuzen-machi, Shimoniikawa District, Toyama, Japan
	NEC TOKIN Electronics (Thailand) Co. Ltd.
	NEC TOKIN Electronics (Xiamen) Corp.
	NEC TOKIN Electronics (Philippines) Inc.
	NEC TOKIN Electronics (Vietnam) Co. Ltd.

Table 5. Product name, description, and applications for selected tantalum capacitors produced by AVX Corp.

[Source: AVX Corp. (2013b)]

Tantalum capacitors	Description	Applications
TAZ Series	CWR09-MIL-PRF-55365/4; CWR19 MIL-PRF-55365/11; CWR29 MIL-PRF-55365/11; Extended Range-63V COTS-Plus Rating	• Include medical devices and military/aerospace.
TCP Series	TCP Series Low ESR Tantalum Modules	
TBJ Series	CWR11- MIL-PRF-55365/8 Established Reliability, COTS-Plus & Space Level; COTS-PLUS-DSCC Dwg 07016 & 95158 Weibull Grade & Space Level	
TBM Multianode	Tantalum Ultra Low ESR COTS-Plus Weibull Grade & Space Level	
TBW Series	Tantalum Fused DSCC Dwg 04053 COTS-Plus Weibull Grade & Space Level	
TBC Series	CWR15 MIL-PRF-55365/12 Established Reliability, COTS-Plus & Space Level; TBC COTS-Plus	
TWA Series	TWA Wet Electrolytic Tantalum Capacitor	
TWM Module	AVX modular packaged 93026 qualified capacitors	
TAJ ESCC Tantalum Capacitors	SMD Solid Tantalum Chip Capacitors	
TAJ CECC Tantalum Capacitors	SMD Solid Tantalum Chip Capacitors	

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
Tantalum Surface Mount Capacitors Standard Tantalum	T491 Industrial Grade MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units.
Tantalum Surface Mount Capacitors Low Equivalent Series Resistance (ESR)	MnO ₂ T494 Industrial Grade Low ESR MnO ₂ Series	
	T495 Surge Robust Low ESR MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.
	T510 Multiple Anode Low ESR MnO ₂ Series	
	Tantalum Stack MnO ₂ (TSM) Series	<ul style="list-style-type: none"> Include decoupling and filtering in a variety of market segments. The T493 COTS stack devices can be utilized in military and aerospace applications. Other KEMET series can be utilized in filtering and decoupling applications to service various market segments.
	Polymer T520 Series Polymer Tantalum	<ul style="list-style-type: none"> Include DC/DC converters, notebook PCs, portable electronics, telecommunications (cell phone and base station), displays, SSD, HDD and USB.
	T521 High Voltage Polymer Tantalum	<ul style="list-style-type: none"> Include DC/DC converters, power supply input and higher voltage applications, such as 12V to 28V power input rails in the military/aerospace and industrial markets.
	T525 125°C Rated Polymer Tantalum	<ul style="list-style-type: none"> Include automotive, industrial, and military as per DSCC 04051.
	T528 Low ESL/Facedown Terminal Polymer Tantalum T530 High Capacitance/125°C Rated Polymer Tantalum	<ul style="list-style-type: none"> Include high-speed server, microprocessor decoupling, and high-ripple-current applications.
	KEMET Organic Capacitor (AO-CAP) A700 Series Polymer Aluminum	<ul style="list-style-type: none"> Include DC/DC converters, notebook PCs, telecommunications, displays, and industrial applications.

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
Tantalum Surface Mount Capacitors High Temperature	T498 150°C Rated MnO ₂ Series T499 175°C Rated MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units operating at temperatures up to 175°C.
Tantalum Surface Mount Capacitors MIL-PRF (CWR Series)	T409 Series CWR09 Style MIL-PRF-55365/4 T419 Series CWR19 Style MIL-PRF-55365/11 T429 Series CWR29 Style MIL-PRF-55365/8 T492 CWR11 Style MIL-PRF-55365/8	<ul style="list-style-type: none"> Include decoupling and filtering in military and aerospace applications requiring CWR09, CWR19, CW29, and CRWR11 devices (precision-molded devices with compliant terminations and indelible laser marking).
Tantalum Surface Mount Capacitors Fused	T496 Fused MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in computing and telecommunications end applications, such as high-end servers requiring built-in fuse capability.
Tantalum Surface Mount Capacitors High Reliability Commercial-Off-The-Shelf (COTS)	T493 Military/Aerospace COTS MnO ₂ Series T497 High Grade COTS MnO ₂ Series T540 Polymer COTS Series T541 Polymer COTS Series	<ul style="list-style-type: none"> Include decoupling and filtering in military and aerospace applications Include decoupling and filtering in military, medical, and aerospace applications. Include decoupling and filtering in military and aerospace applications that require low ESR or a benign failure mode.
Tantalum Surface Mount Capacitors Automotive Grade	T491 Industrial Grade MnO ₂ Series T494 Industrial Grade Low ESR MnO ₂ Series T489 Low Leakage MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units. Include decoupling and filtering in industrial and automotive high-end applications.

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
Tantalum Surface Mount Capacitors Automotive Grade—Continued	T495 Surge Robust Low ESR MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.
	T498 150°C Rated MnO ₂ Series T499 175°C Rated MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units operating at temperatures up to 175°C.
	T510 Multiple Anode Low ESR MnO ₂ Series	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.
	T525 125°C Rated Polymer Tantalum	<ul style="list-style-type: none"> Include automotive, industrial, and military applications as per DSCC 04051.
	T493 Series COTS Space Grade	<ul style="list-style-type: none"> Include decoupling and filtering in military and aerospace applications.
Tantalum Surface Mount Capacitors Space Grade	T496 Series Fail-Safe Fused Space Grade	<ul style="list-style-type: none"> Include decoupling and filtering in computing and telecommunications end applications, such as high-end servers requiring built-in fuse capability.
	T497 Series High Grade COTS Space Grade	<ul style="list-style-type: none"> Include decoupling and filtering in military, medical, and aerospace applications.
	T510 Series Multiple Anode Low ESR Space Grade	<ul style="list-style-type: none"> Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
T409 Series	T409 Series CWR09 Style MIL-PRF-55365/4	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications requiring CWR09 devices.
T419 Series	T419 Series CWR19 Style MIL-PRF-55365/11	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications requiring CWR19 devices.
T429 Series	T429 Series CWR29 Style MIL-PRF-55365/8	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications requiring CWR29 devices.
T489 Series	T489 Low DC Leakage MnO ₂ Series	<ul style="list-style-type: none"> • Include decoupling and filtering in industrial and automotive high-end applications.
T491 Series	T491 Industrial Grade MnO ₂ Series	<ul style="list-style-type: none"> • Not available.
T492 Series	T492 CWR11 Style MIL-PRF-55365/8	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications requiring CWR11 devices.
T493 Series (COTS)	T493 Series - Approved to DSCC Drawing 07016-Military/Aerospace COTS MnO ₂	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications.
T493 Series Space Grade	T493 Series COTS (CWR11 Style)	<ul style="list-style-type: none"> • Include decoupling and filtering in military and aerospace applications.
T494 Series	T494 Industrial Grade Low ESR MnO ₂ Series	<ul style="list-style-type: none"> • Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units.
T495 Series	T495 Surge Robust Low ESR MnO ₂ Series	<ul style="list-style-type: none"> • Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.
T496 Series	T496 Fused MnO ₂ Series	<ul style="list-style-type: none"> • Include decoupling and filtering in computing and telecommunications end applications, such as high-end servers requiring built-in fuse capability.
T496 Series - Approved to DSCC Drawing 04053- Fail-Safe Fused Tantalum Chip	T496 Series - Approved to DSCC Drawing 04053- Fail-Safe Fused Tantalum Chip	<ul style="list-style-type: none"> • Not available.

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
T496 Series Space Grade	T496 Series Fail-Safe Fused MnO ₂	• Military and aerospace customers in high-reliability space applications.
T497 Series	T497 High Grade COTS MnO ₂ Series	• Include decoupling and filtering in military, medical, and aerospace applications.
T497 Series Space Grade	T497 Series High Grade COTS (CWR09/19/29 Style)	
T498 Series	T498 150°C Rated MnO ₂ Series	• Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units operating at temperatures up to 150°C.
T499 Series	T499 175°C Rated MnO ₂ Series	• Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units operating at temperatures up to 175°C.
T510 Series	T510 Multiple Anode Low ESR MnO ₂ Series	• Include decoupling and filtering in industrial and automotive end applications, such as DC/DC converters, portable electronics, telecommunications, and control units requiring high-ripple-current capability.
T510 Series Space Grade	T510 Series Multiple Anode Low ESR MnO ₂	
T513 Series	T513 Multiple Anode Low ESR COTS MnO ₂ Series	• Suitable for the industrial, communications, military, and aerospace markets. Typical applications include decoupling and filtering in radar, sonar, power supply, guidance systems, and other high-reliability applications.
TSM Series	TSM Series Tantalum MnO ₂ Surface Mount Stack Capacitors	• Include decoupling and filtering in a variety of market segments. The T493 COTS and 540 stack devices can be utilized in military and aerospace applications. Other KEMET series can be utilized in filtering and decoupling applications to service various market segments.
TSP Series	TSP Series Tantalum Stack Polymer Surface Mount Capacitors	

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
T540 Series	T540 Polymer COTS	<ul style="list-style-type: none"> Include decoupling and filtering in military and aerospace applications that require low ESR or a benign failure mode.
T541 Series	T541 Polymer COTS Multiple Anode	
T520 Series	T520 Series Polymer Tantalum	<ul style="list-style-type: none"> Include DC/DC converters, notebook PCs, portable electronics, telecommunications (cell phone and base station), displays, SSD, HDD and USB.
T521 Series	T521 High Voltage Polymer Tantalum	
T522 Series	T522 Reduced Leakage Polymer Tantalum	<ul style="list-style-type: none"> Include battery-dependent applications, such as handheld consumer electronics, global tracking systems, energy harvesting, wireless sensors, and other applications that seek high capacitance, low profile, safety, and low power consumption.
T525 Series	T525 125°C Rated Polymer Tantalum	
T525 Series - Approved to DSCC Drawing 04051 - High-Temperature Tantalum Chip	T525 Series - Approved to DSCC Drawing 04051 - High-Temperature Tantalum Chip	<ul style="list-style-type: none"> Not available.
T528 Series	T528 Low ESL/Facedown Terminal Polymer Tantalum	
T530 Series	T530 High Capacitance/125°C Rated Polymer Tantalum	<ul style="list-style-type: none"> Include high-speed server, microprocessor decoupling, and high-ripple-current applications.
T530 Series - Approved to DSCC Drawing 04052 - High-Capacitance/Ultra-Low ESR Tantalum Chip	T530 Series - Approved to DSCC Drawing 04052 - High-Capacitance/Ultra-Low ESR Tantalum Chip	

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
<i>B45 Series - Automotive</i>	B45196L, B45198L	<ul style="list-style-type: none"> Automotive electronics (for example, safety applications: airbags, ABS, motor management) Measuring and control engineering (for example, voltage regulators), and DC/DC converters
<i>B45 Series - High Capacitance</i>	B45196E/H, B45198E/HL	<ul style="list-style-type: none"> Telecommunications (for example, cell phones, infrastructure) Data processing (for example, laptops, mainframes) Measuring and control engineering (for example, voltage regulators) Automotive electronics (for example, safety applications—airbags, ABS, motor management) Medical engineering DC/DC converters
<i>B45 Series - High Temperature</i>	B45196T, B45198T	<ul style="list-style-type: none"> Automotive electronics (for example, safety applications—airbags, ABS, motor management, electronic control unit) Measuring and control engineering (for example, voltage regulators) Medical engineering DC/DC converters Telecommunications (for example, cell phones, infrastructure) Data processing (for example, laptops, mainframes)
<i>B45 Series - Low Profile</i>	B450, B45190E/R, B45192E/R, B45194E/R	<ul style="list-style-type: none"> Telecommunications (for example, cell phones, infrastructure) Data processing (for example, laptops, mainframes) Measuring and control engineering (for example, voltage regulators) Automotive electronics (for example, navigation systems, electronic control units) Medical engineering Switch mode power supplies with very high clock frequencies (300 kHz) DC/DC converters

Table 6. Product name, product description, and applications for selected tantalum (Ta) capacitors produced by KEMET Corp.—Continued

[ABS, anti-lock braking system; DC, direct current; DSCC, Defense Supply Center Columbus; ESL, Equivalent Series Inductance; HDD, hard disk drive; kHz, kilohertz; MnO₂, manganese oxide; PC, personal computer; SSD, solid-state drive; USB, Universal Serial Bus (USB); V, volt. Source: KEMET Corp. (2013a, b)]

Tantalum capacitors	Description	Applications
<i>B45 Series - Multiple Anode</i>	B45396R	<ul style="list-style-type: none"> • Telecommunications (for example, cell phones, infrastructure) • Data processing (for example, laptops, mainframes) • Measuring and control engineering (for example, voltage regulators) • Medical engineering • DC/DC converters
<i>B45 Series - Performance</i>	B45196P, B45198P	<ul style="list-style-type: none"> • Automotive electronics (for example, safety applications—airbags, ABS, motor management) • Measuring and control engineering • Medical engineering • DC/DC converters • Telecommunications (for example, cell phones, infrastructure) • Data processing (for example, laptops, mainframes)
<i>B45 Series - SpeedPower</i>	B450, B451, B45197A, B45198R	<ul style="list-style-type: none"> • Telecommunications (for example, cell phones, infrastructure) • Data processing (for example, laptops, mainframes) • Measuring and control engineering (for example, voltage regulators) • Automotive electronics (for example, navigation systems, electronic control units) • Medical engineering • DC/DC converters
<i>B76 Series - Conductive Polymer</i>	B760	<ul style="list-style-type: none"> • Not available.

The Washington Post

Africa

How a well-intentioned U.S. law left Congolese miners jobless

By Sudarsan Raghavan November 30, 2014

LUNTUKULU, Congo — When his father could no longer make enough money from the tin mine, when he could no longer pay for school, Bienfait Kabesha ran off and joined a militia. It offered the promise of loot and food, and soon he was firing an old rifle on the front lines of Africa's deadliest conflict. He was 14.

But what makes Kabesha different from countless other child soldiers is this: His path to war involved not just the wrenching poverty and violence of eastern Congo but also an obscure measure passed by American lawmakers.

Villagers call it "Loi Obama" — Obama's Law.

The legislation compels U.S. companies to audit their supply chains to ensure that they are not using "conflict minerals" — particularly gold, coltan, tin and tungsten from artisanal mines controlled by Congo's murderous militias. It was championed by influential activists and lawmakers, both Republicans and Democrats, and tucked into the massive Wall Street reform law known as the Dodd-Frank Act.

The law's supporters argued that it would weaken the militias by cutting off their mining profits.

But the legislation, signed by President Obama four years ago, set off a chain of events that has propelled millions of miners and their families deeper into poverty, according to interviews with miners, community leaders, activists, and Congolese and Western officials, as well as recent visits to four large mining areas.

As it sought to comply with the law, Congo's government began by shutting down the mining industry for months. Then, a process was launched to certify the country's minerals as conflict-free. But the process is unfolding at a glacial pace, marred by a lack of political will, corruption and bureaucratic and logistical delays.

That has led foreign companies to avoid buying the minerals, which has driven down prices. Many miners are forced to find other ways to survive, including by joining armed groups. Meanwhile, the militias remain potent threats.

"The intention of the law was good, but in practice, it was not well thought-out," said Eric Kajemba, director of the Observatory for Governance and Peace, a regional nonprofit group. "This is a country where the government is absent in many areas, plagued by years of war and bad governance, where the economic tissue has been destroyed.

Disseminated by Winning Strategies Washington, an agent of a foreign principal. Additional information is on file with the Department of Justice.

The American lawmakers didn't appear to take this into consideration."

Requests for comment were made to former senator Russell Feingold (D-Wis.), a key backer of the conflict-minerals assurance who is now the U.S. special envoy to the Great Lakes region, which includes Congo. But his office said he was not available. The State Department also did not reply to several requests for comment.

As of June, the government had certified just 25 mining sites out of hundreds in South and North Kivu provinces as "green" — meaning there was no presence of armed groups and there were no children or pregnant women laborers — according to U.N. monitors. As of October, there were only 11 mines out of more than 900 here in South Kivu where minerals were "tagged" as conflict-free, said Adalbert Murhi Mubalama, the province's minister of mines.

Government and international mine certification agencies, he said, have been unable to audit most mining areas because of their size, poor roads and insecurity. Shabunda territory, where most of South Kivu's mines are located, is almost as big as Belgium and is controlled mostly by a ruthless militia. The government, he said, "can't go there."

Rapid downturn

The United Nations estimates that Congo has untapped mineral reserves worth \$24 trillion. Since the late 1990s, militias, rebel groups and armies have plundered these riches, using them to fuel a string of wars that have caused more deaths than any conflict since World War II.

In the United States, the furor over conflict minerals intensified with revelations that multinational firms such as Apple, Intel and Motorola were unwittingly buying conflict minerals to make products such as smartphones and laptop computers. Activists pressured lawmakers to pass the measure in the Dodd-Frank Act.

It quickly had an effect. In the fall of 2010, two months after the law's signing, Congo's government halted mining for six months — even at facilities not controlled by armed groups. The move had tremendous repercussions in a country where, by some estimates, a sixth of the 70 million inhabitants depend on artisanal mining.

In Luntukulu, a mineral-rich region nestled in rocky hills near the border of Shabunda territory, more than a dozen out-of-work miners joined the Raia Mutomboki militia after the government imposed the ban, village elders and mining cooperative leaders said.

"If we were earning more money from mining, I would not have entered the militia," said Kabesha, now 16, as he sat in a grass hut.

When he joined, he was handed a rifle and taught to shoot. Within months, he was looting villages and fighting government forces and other militias.

Last year, he fled and entered a program to rehabilitate child soldiers. But he's still not attending school.

'A weight on us'

In 2010, before the law passed, miners were selling a kilogram of tin — about two pounds — for \$7. The world market price averaged \$18 a kilo. Scores of buyers came to Luntukulu for minerals. They were exported to smelters around the world, from which American companies purchased them.

Now, the miners get only \$4 for a kilo of tin — even though the global market price this year has averaged \$22 per kilo. None of the 15 mines in Luntukulu that produce tin and gold have been certified as conflict-free.

This year, only 12 buyers showed up, miners and community leaders said.

Some of the untagged minerals are bought by Chinese and Indian firms that are not subject to the Dodd-Frank law. But the loss of American and other Western clients has been keenly felt.

As in many mining communities, with less money flowing in, shops in Luntukulu have closed. Many people here struggle to feed their families through farming.

Obama's Law wasn't signed, the ban would not have existed," said Waso Mutiki, 41, president of the miners cooperative in Luntukulu. "It destroyed everything."

Even at the few mines certified as conflict-free, miners face hardship. Near Nzibira, a village about 15 miles from here, miners in blue uniforms dig in pits, searching for tin ore. The minerals are placed in tagged bags, indicating they meet international standards.

But the miners still get \$4 per kilo. That's because there are only a few trading houses in the provincial capital, Bukavu, due to the limited supply of tagged minerals and delays in providing government licenses to buy them, miners and community leaders said. The houses fix the price, they added.

"The law of Obama is like a weight on us," said Michel Mushagalusa, 30, vice president of the mining cooperative in Nzibira.

Some activists and researchers say that minerals aren't the core cause of Congo's war — that there are other, more powerful factors, such as political and ethnic struggles and conflicts over land. And regulating the minerals, they say, does little to thwart the militias.

Supporters of the American law say the plundering of minerals is a key stimulant of the conflict. They say the

legislation has spurred measures by corporations and African governments to help end the illegal trade. But even some of the law's biggest proponents say the Obama administration and tech companies should have provided aid as the legislation was being implemented

"Four years went by with almost no support for Congolese miners," wrote the Enough Project, a powerful activist group, in an open letter published Oct. 30. It added that American and other donors had only recently set up aid programs, "but they have yet to be felt by mining communities."

Thriving from gold

In a report published this past summer, the Enough Project found that armed groups were no longer present at two-thirds of tin, tungsten and coltan mines in three eastern Congo provinces and cited the law as the reason. Nonetheless, some of the most brutal militias are still thriving in those provinces and others.

In some areas outside of Luntukulu and in Shabunda territory, the Raia Mutomboki are the lords.

The militia, whose name means "outraged citizens" in Swahili, sells diggers access to mining pits and takes a percentage of the minerals unearthed, a large portion of which are smuggled out through neighboring countries.

...e fighters also exact taxes at checkpoints.

"Almost all our mines are controlled by Raia Mutomboki," said Mozart Manigua, 42, president of a cooperative that oversees 20 mines in Kimbli, a vast area within Shabunda. Local people "have no choice but to work for the militia."

In other areas, militias have switched to selling palm oil, charcoal, marijuana, cattle and soap, said community leaders, activists and U.N. monitors. Their income is hardly as much as they earned from minerals, but it's enough to continue destabilizing eastern Congo.

Gold, though, remains a lucrative financial pipeline for armed groups, according to U.N. investigators. By some estimates, \$400 million in gold from artisanal mines was smuggled out last year, most of it fueling armed actors and tainting the global gold supply.

Increasingly, Congo's army is becoming a major player in the conflict-minerals trade.

...liers help smuggle untaxed minerals out through Rwanda, Uganda and Burundi, according to U.N. experts and Congolese government and law enforcement officials.

"It's some of the big commanders," said Mubalama, the mining minister.

Sudarsan Raghavan has been The Post's Kabul bureau chief since 2014. He was previously based in Nairobi and Baghdad for the Post.

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Monkey Cage

Eastern Congo, economic colonialism in the guise of ethical consumption?

By Christoph Vogel and Ben Radley September 10, 2014

The following is a guest post by Christoph Vogel and Ben Radley. Vogel is an Independent Analyst and a PhD candidate at the University of Zurich. Radley is a Director for Heartland Alliance and a PhD student at the International Institute of Social Studies.

When we think of the Congo today, we may think of bloody resource wars where women are being raped by armed groups to gain access to and control of the country's minerals. If we do so, it's because of the work of numerous NGOs, advocacy organizations, and activists such as the [Enough Project](#) or the "no blood in my mobile" campaign, who have been campaigning for several years to reduce conflict in the eastern Congo by "cleaning up" the region's mineral trade. The struggle against so-called "conflict minerals" has literally become, borrowing Autesserre's words, a lopsided "dominant narrative" spanning policy discourses and practical engagement in the sector.

most significant policy result of this work to date, [Section 1502](#) of the Dodd-Frank Act, was passed by the Congress and signed into law in July 2010. It requires companies registered on the U.S. stock market to report on an annual basis whether their minerals have been sourced from the eastern DRC or neighboring countries, and thus, potentially financing conflict. This has in turn led to recent announcements by electronics giants including Apple and Intel that more of their products will be "conflict-free" in the future. In the meantime, a [coalition of around 70 Congolese leaders and international experts](#) argue that, in the Congo itself, the movement risks contributing to, rather than alleviating, the very conflicts it sets out to address. While not calling to keep transparency and regulation at the lowest level, their open letter urges governments, companies, and other stakeholders to carefully rethink and increase their engagement on the issue.

More than four years after the signing of the Dodd-Frank Act, only a small fraction of the hundreds of mining sites in the eastern DRC have been reached by practical measures emanating from Dodd-Frank legislation, such as supply chain traceability or mineral export certification. As of now, four areas (Nyabibwe, Rubaya, Lemera, and Nzibira) have been introduced into traceability schemes allowing for legal trade in tin, tantalum, and tungsten (3T) minerals. If they include around 30 mining sites, the overwhelming majority of mining sites (far more than 1000 across the provinces of North and South Kivu alone) has not become part of the bagging-and-tagging system iTSCI, put in place by the international tin industry body ITRI. The result is a *de facto* embargo targeting the lion's share of Congolese mining communities, while at the same time violence and the presence of armed groups have not

significantly decreased in the region.

As other traceability schemes have not yet become operational, iTSCI (and its partner projects such as Motorola's "Solutions for Hope" initiative which seems to be engaging a little more constructively on the ground) represents the only legal way for Congolese to sell "conflict-free" minerals to international markets. Hence, a large part of the local mining economy remains "beyond the pale, forced into either illegality or collapse as certain international buyers have responded to the legislation by going 'Congo-free.'" Our own field work in 2013 and 2014 as well as academic research by others in eastern Congo has shown that, while only a small number of mining sites is de-facto controlled by armed actors, all players involved in the mineral supply chain are at risk of being captured – that is, taken over – by enduring networks of fraud and violent exploitation that want to retain a chance of selling their minerals. In a recent report, Global Witness partly confirms these tendencies with a particular focus on military involvement.

Worse still, as our recent field observations reveal, the economic situation in the four "clean areas" remains dire. In some sites prices have stagnated while others have experienced a loss of market competitiveness as the iTSCI system creates new costs and new bureaucratic requirements. Although ITRI usually maintains no more than a pseudo-presence in the sites – they deploy field staff that rarely if at all visit the actual mining sites – it deeply impacts the local economy. In response to ITRI's requirements, institutions change, creating a cash cow for both state and non-state actors involved in a myriad of additional, semi-formal taxation systems that go mostly unregulated and uncontrolled on the ground. Then, beyond maintaining its access to mineral supplies, ITRI's employees are mostly busy with levying enormous fees from its local partners and preventing the scheme's competitors in the "traceability market" from establishing alternative systems.

All this has had a number of damaging consequences. Large numbers of Congolese miners have lost their jobs, with some joining armed groups as a way to earn a quick buck in the total absence of alternative employment opportunities. At the same time the United Nations Group of Experts found that the region's black market in minerals has been strengthened (and the Goma-based mining police is recently reporting heavy increases in trans-border fraud attempts), playing into the hands of the very mafia and rebel networks the campaign was attempting to starve of mineral revenue in the first place.

As if this was not devastating enough, the fluidity of armed movements in this area makes the validation of the "clean sites" very difficult. With militias (or their civilian-clothed friends and family) present in and around the mines, the validity of the "conflict-free" designation is often fluid over time, particularly given the delay between when a mine site is visited, validated, included into a traceability scheme, and later audited – all that taking months, if not years in some cases. Such delays are further complicated by an institutional cacophony of interests of international and local actors supposed to jointly validate sites. The additional industry audits, on their side, blatantly neglect local realities – among the sites included into the scheme so far, many raise serious concerns about the credibility of the whole traceability effort. In certain cases, the presence of armed actors has not prevented ITRI from including a site for the

sake of quick business.

Hailed by numerous international stakeholders, the first years of implementing systems to create a market for “conflict-free” minerals clearly show the limits of such an approach. While it is already difficult as such – an argument often used by lazy and profit-oriented international industries – the implementation is further hampered by a few other factors: The same industry proposing to seek a clean market for Congolese minerals appears to be completely disinterested in local realities, including minerals’ actual “cleanliness,” as long as the market continues to function. Moreover, almost no corporate stakeholder – despite their nicely publicised corporate social responsibility policies – has visibly engaged in eastern Congo to help Congolese actors comply with regulations, improve labor security, or increase decent livelihoods. Most conflict minerals advocates have yet to address these shortcomings.

ITRI’s bagging-and-tagging scheme has – notwithstanding the costs it burdens onto local producers – neither developed a mechanism to prevent untagged minerals from entering the circuit, nor come up with a supply chain mechanism that fulfils the due diligence standards proposed by the OECD and UN. Instead, the industry-led traceability scheme currently serves more as an artificial price-control mechanism and a monopolization tool: the levy ITRI demands for each ton of tin is directly subtracted from the official selling price (which corresponds to the London Metal Exchange in the case of tin and to bilaterally negotiated prices for the non-listed tantalum). The net effect is that Congolese miners must pay the international tin industry for the right to sell their minerals with a tag that implies – but does not necessarily achieve – conflict-free status. As argued in a forthcoming Social Science Research Council research paper, traceability also triggered a monopolization of the market at various levels of the supply chain: local producers are beholden to buyer monopolies within a closed pipeline. The choice they face is to sell at the artificially reduced, buyer-controlled price or to go “illegal,” meaning trespassing the iTSCI scheme.

Moreover, it remains unclear to what extent the Congolese mining industry is impacted in terms of production and exportation. ITRI does not publish any concrete statistics on DRC mineral production levels. Confidential records confirm that, for a time, ITRI even tried refusing to share its data with the Congolese government. This surprisingly secretive policy runs diametrically counter to any attempts to increase transparency and accountability as repeatedly recommended.

With all this, the “conflict minerals” approach appears to arrive at a critical juncture, facing two possible futures. If the required improvements recommended in the letter and brought forward by other researchers and analysts are undertaken, a reliable and viable system ensuring more ethical products are produced and consumed and leading to improvements in the daily lives of the Congolese is possible. This includes first and foremost a finer understanding of Congo’s mineral sector on the one hand as well as of underlying problems creating violence and instability in the concerned region on the other. Alternatively, the movement risks descending into “green-washing” of the worst kind, whereby multinationals and others improve their public image, while in the Congo – the country on which this image is founded – no solutions are found, just new problems created.

What's Wrong with Dodd-Frank 1502?

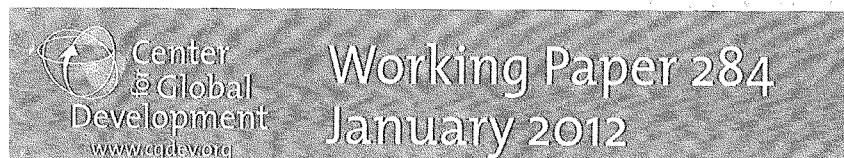
Conflict Minerals, Civilian Livelihoods, and the Unintended Consequences of Western Advocacy

Laura E. Seay

Abstract

Although its provisions have yet to be implemented, section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act is already having a profound effect on the Congolese mining sector. Nicknamed "Obama's Law" by the Congolese, section 1502 has created a de facto ban on Congolese mineral exports, put anywhere from tens of thousands up to 2 million Congolese miners out of work in the eastern Congo, and, despite ending most of the trade in Congolese conflict minerals, done little to improve the security situation or the daily lives of most Congolese. In this report, Laura Seay traces the development of section 1502 with respect to the pursuit of a conflict minerals-based strategy by U.S. advocates, examines the effects of the legislation, and recommends new courses of action to move forward in a way that both promotes accountability and transparency and allows Congolese artisanal miners to earn a living.

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**What's Wrong with Dodd-Frank 1502?
Conflict Minerals, Civilian Livelihoods, and the Unintended
Consequences of Western Advocacy**

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Foreword

Hidden within the 2,300-page Dodd-Frank Wall Street Reform and Consumer Protection Act are two sections (1502 and 1504) aimed not at preventing another financial meltdown but, rather, at fostering transparency about commercial activities in foreign countries. In 2010, CGD awarded its Commitment to Development Award to Publish What You Pay in recognition of the role it played in passing Section 1504 of the bill, which requires companies listed on U.S. stock markets to disclose payments to foreign governments. Section 1504 was hailed as a historic victory for the transparency agenda, and an important tool to help citizens hold their governments accountable. Section 1502, on the other hand, requires publicly traded companies to report to the SEC whether they source conflict minerals from the Democratic Republic of the Congo (DRC) or its neighbors. It is much more controversial.

In this paper commissioned by CGD, Laura Seay, assistant professor of political science at Morehouse College and specialist on the DRC, analyzes 1502 and its effects—even before the rules are implemented. She argues that this well-intentioned but ultimately misguided provision has already had unintended consequences that hurt those it is supposed to help. Aimed at curbing the flow of revenues that fuel conflict, 1502 has led to a de facto boycott on Congolese minerals given uncertainty over regulation and the impossibility of tracing certain minerals such as gold. The result: millions of artisanal miners are out of work, and the livelihood of millions more put at risk without any significant connection to a reduction in the violence.

Seay explores what went wrong and argues that the initiative was based on misperceptions about the relationship between mineral exploitation and conflict in the Congo, the nature of the conflict, and the feasibility of traceability schemes in such an environment. Seay demonstrates the need to reassess this policy with a more careful understanding of the dynamics on the ground. This is especially critical as the SEC determines if the provision is implementable and governments in Europe consider similar legislation.

Todd Moss
Center for Global Development

Executive Summary

Although its provisions have yet to be implemented, section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act is already having a profound effect on the Congolese mining sector. Nicknamed “Obama’s Law” by the Congolese, section 1502 has created a *de facto* ban on Congolese mineral exports, put anywhere from tens of thousands up to 2 million Congolese miners out of work in the eastern Congo, and, despite ending most of the trade in Congolese conflict minerals, done little to improve the security situation or the daily lives of most Congolese. In this report, I trace the development of section 1502 with respect to the pursuit of a conflict minerals-based strategy by U.S. advocates, examine the effects of the legislation, and recommend new courses of action to move forward in a way that both promotes accountability and transparency and allows Congolese artisanal miners to earn a living.

Recommendations

1. **Implement Dodd-Frank section 1502 in phases with clear annual benchmarks over three years.** In order to eliminate confusion about competing traceability schemes and to allow corporations time to establish realistic, workable procedures, section 1502 should be implemented slowly and in stages. Emphasis should be placed on a consensus-building process and improving buy-in for participation in traceability schemes in Congolese mining communities.
2. **Provide immediate assistance to affected mining communities.** Humanitarian assistance should immediately be provided to miners and their families who have lost reliable sources of income as a result of the *de facto* ban on the Congolese mineral trade. In particular, donors should assist miners’ families with short-term education and health care expenses.
3. **Turn traceability into a jobs program.** The international community should work with local actors to improve economic livelihoods opportunities for Congolese miners. Particular efforts should be focused on hiring former miners to work for traceability schemes and on developing alternative livelihood opportunities beyond subsistence agriculture.
4. **Create formal mechanisms for Congolese leadership in the implementation process.** In order to find practical and realistic ways of combating the conflict minerals problem, a wide spectrum of Congolese civil society leaders should be at the forefront of traceability scheme implementation processes as well as efforts to improve regional security. The international community should create mechanisms by which all voices – including dissenting ones – can be heard and compromises can be reached.

5. **Focus on security sector reform as a distinct issue.** Given the lack of governance and state control in eastern D.R. Congo, as well as armed groups' access to a wide variety of revenue sources, improving mineral traceability in the region is highly unlikely to improve the security situation. Policy makers should focus separately on security sector reform and work to protect civilians independently of the conflict minerals issue.

List of Acronyms

BGR	German Federal Institute for Geosciences & Natural Resources	
CNDP	Congr�s National pour la D�fense du Peuple	Former DRC rebel group
EICC	Electronic Industry Citizenship Coalition	Industry watchdog coalition
EITI	Extractive Industries Transparency Initiative	Global standard for revenue transparency
FDLR	Forces D�mocratiques de Lib�ration du Rwanda	DRC rebel group
ITIC	Information Technology Industry Council	Industry lobby organization
ITRI	International Tin Research Institute	Tin industry organization
ICGLR	International Conference of the Great Lakes Region	Regional civil society organization
PROMINES	Mineral Sector Project	World Bank transparency project
OECD	Organization for Economic Co-operation & Development	International organization
RINR	ICGLR Regional Initiative Against the Illegal Exploitation of Natural Resources	
SEC	Securities and Exchange Commission	U.S. government agency

Introduction

The ongoing crisis in the eastern Democratic Republic of Congo, where up to 6 million excess deaths have been recorded since 1998 and government neither controls nor governs its territory in a meaningful sense, is cause for concern to the international community and the United States government. The D.R. Congo is home to more than 60 million people who have suffered profoundly as a result of their state's collapse and a series of local, national, and international conflicts that began in the early 1990's and some of which continue until today. In the aftermath of the contentious and contested November 2011 elections, DRC's future stability and ability to develop are both in question. In the United States, the issue of conflict minerals has become one of the dominant narratives about the crisis. As Autesserre notes, however, the overwhelming focus on conflict minerals as a cause of conflict in the D.R. Congo has perverse consequences that actually prevent international and local actors from developing a comprehensive solution to the country's conflicts.¹ Moreover, Western advocacy efforts on conflict minerals have thus far made life more difficult for many Congolese while failing to stop the violence they purport to address. Instead, these efforts have thus far increased smuggling,² led armed groups to seek other sources of revenue, and left up to 2 million Congolese artisanal miners out of work. As is the case with the Kimberley Process, good intentions and the belief that attacking the perceived economic roots of conflict was a path to peace have largely proved ineffective.

In this paper, I seek to explain why efforts to create a mineral supply chain tracing scheme have thus far failed to improve the D.R. Congo's security situation, and why these efforts are unlikely to lead to peace in the future. I begin by providing brief background on the mineral sector in the D.R. Congo and then turn to a discussion of recent advocacy efforts relating to the region. Following that, I then turn to a discussion of the creation of legislation that became Dodd-Frank Sections 1502 and 1504 and the effects this legislation has had since its passage in July 2010. I debate the decision to pursue "conflict minerals" as a means by which to make progress on improving Congolese security, and criticize advocates for misunderstanding the relationship between conflict and the local economy. Finally, I conclude with a summary of the debate over the Securities and Exchange Commission regulations that are to be issued under section 1502 and make policy recommendations for moving forward in a way that can satisfy the advocacy community, industry, and those who care about responsible supply chain sourcing while allowing Congolese artisanal miners to work and provide for their families and moving toward a more transparent, accountable, and legitimate mining sector in the eastern D.R. Congo.

¹ Séverine Autesserre, "Dangerous Tales: Dominant Narratives on the Congo and their Unintended Consequences." *African Affairs* (Forthcoming 2012).

² Jonny Hogg and Graham Holliday, "Conflict minerals crackdown backfiring in Congo." Reuters (30 December 2011). Available: <http://af.reuters.com/article/drcNews/idAFL6E7NU25720111230?sp=true>

Background: The Mineral Trade in the Eastern D.R. Congo

The Democratic Republic of Congo is one of the richest sources of natural resources on Earth. Contained within the country's borders and territorial waters are oil, gold, rubber, cobalt, copper, uranium, diamonds, tantalum, cassiterite, wolframite, and countless other mineral resources. Abundant natural resources are found throughout Congolese territory, but particular minerals are highly concentrated in certain areas. Katanga province, in southeastern D.R. Congo, is home to high concentrations of cobalt, copper, uranium, and tin, while much of the region's gold is found in the northeastern Orientale province (particularly in Ituri district) and the northern reaches of north Kivu. Diamonds are largely located in the central Kasai provinces, while the eastern North and South Kivu provinces have high concentrations of tin, cassiterite, tungsten, and tantalum.

The D.R. Congo's natural resources have always been a draw for outsiders looking for wealth in the vast territory. Belgian colonialism was intimately tied to rubber extraction and used brutal methods to force the Congolese to gather it. American scientists used Uranium-235 from Katanga in the atomic bombs dropped on Nagasaki and Hiroshima to end World War II, and Cold War-era policy makers overlooked dictator Mobutu Sese Seko's excesses and corruption to ensure that they could maintain access to uranium and other essential minerals.

Congolese minerals again drew global attention in the late 1990's and early 2000's as world prices for tantalum skyrocketed. Tantalum, a mineral that is a key component in many consumer electronics, was in high demand as consumer demand for mobile phones and gaming systems. Tantalum is found in the D.R. Congo in the form of coltan (columbite-tantalite) and armed groups, including the armies of Rwanda and Uganda, quickly realized that they could profit from the extraction of tantalum and other regional minerals. However, it is important to note that mineral extraction was neither the cause nor root of violence in the Kivu provinces or Ituri. As anthropologist Stephen Jackson noted in 2003, "The present war in the DRC did not begin with explicitly economic objectives. Rather, as the war reached a stalemate nationally, so belligerents turned inwards to the territory they controlled, capitalising – personally as well as collectively – on the rich resources available. Coltan both finances violence and provides an incentive for it."³

D.R. Congo's role as a supplier of coltan to international markets has been repeatedly and erroneously overstated, as documented by Michael Nest. A series of incorrect and misinterpreted assertions led to the oft-repeated claim that Congo is home to "80% of the world's coltan reserves," or "supplies," yet there is no basis of truth to either of these claims. As Nest notes, we do not actually know how much tantalum is in the D.R. Congo, but "The most informed estimate is that Central Africa has around 9% per cent of the global reserves.

³ Stephen Jackson, "Fortunes of war: the coltan trade in the Kivus" in Sarah Collinson, ed. *Power, Livelihoods, and Conflict: Case Studies in Political Economy Analysis for Humanitarian Action*. Overseas Development Institute Humanitarian Policy Group (2003), 21-36.

The DRC's reserves are the major component of these – perhaps 7 to 8 per cent of global reserves.”⁴ Thus the importance of Congolese minerals in global supply chains for coltan is not as large as many have claimed. Its importance to the Congolese economy is still very significant.

There is no question that some Congolese and foreign armed groups fought for control of the mineral trade in eastern D.R. Congo, nor is there a question that some groups engaged in mining also engage in civilian-directed violence. The United Nations Group of Experts on the Democratic Republic of Congo have done excellent work documenting the ways that the mineral trade finances violent armed groups in the eastern Congo.⁵ However, not all violence in the eastern D.R. Congo is related to the mineral trade, and not all mines are controlled by violent actors. Moreover, the eastern Congolese economy is largely dependent on mineral trade, whether linked to violence or not. As Jackson notes, “tantalum mining has become a critical mode of survival for many at the grassroots.”⁶ In many families, mining activity is generational and represents their only potential economic livelihood.⁷

It is difficult to overstate the importance of the mining sector to the Congolese economy. As Goma's Pole Institute Research Director Aloys Tegera notes, it “accounts for 80% of the exports, 72% of the national budget and 28% of GDP according to the latest available statistics. Its output and sales are of major importance for the economy. Also other economic sectors, for example the agricultural sector, are influenced by the mining sector. Locally, everybody depends on mining!”⁸

Congo Advocacy and the Mineral Trade

Prior to the late 2000's, there was little advocacy attention on the situation in the eastern Congo. During the war, journalists had actively covered the region, but from about 2002 on, most international attention focused on the growing crisis in Darfur. While a few newspaper articles on the Congo situation appeared from time to time and the International Crisis Group and several non-governmental organizations released regular reports on the crisis, there was no grassroots constituency centered around drawing attention to or effecting change in the D.R. Congo.

⁴ Michael Nest, *Coltan* (Cambridge: Polity Press, 2011), 18.

⁵ Reports of the Group of Experts Submitted through the Security Council Committee Established Pursuant to Resolution 1533 (2004) Concerning the Democratic Republic of Congo. Available: <http://www.un.org/sc/committees/1533/egroup.shtml>

⁶ Stephen Jackson, “Making a Killing: Criminality and Coping in the Kivu War Economy,” *Review of African Political Economy* 93:94 (September 2002), 516-536.

⁷ Sara Geenen, “Constraints, opportunities, and hope: which future for gold miners and traders in Kamituga, South Kivu?” in An Ansoms and Stefaan Marysse, eds., *Natural Resources and Local Livelihoods in the Great Lakes Region of Africa* (New York: Palgrave, 2011).

⁸ Aloys Tegera. Quoted in “Report of Roundtable on Conflict Minerals Legislation.” makeITfair Campaign (11 July 2011). Available: <http://makeitfair.org/the-facts/reports/roundtable-on-conflict-minerals-legislation>

That changed in 2007 with the launch of the Enough Project, which was created with the primary purpose of developing an American constituency around ending and preventing conflict in Africa. Enough's early advocacy on the D.R. Congo focused on the horrific nature of civilian-directed violence and the need for increased civilian protection efforts. Their 2007 and 2009 reports and activist briefs emphasized the complex nature of the violence there and the need for multi-pronged approaches to crisis resolution.⁹ These documents contained little or no mention of the mineral issue. They also did little to build a grassroots constituency engaged on Congo in the United States.

Enough's focus shifted dramatically in April 2009 with the release of their "Can You Hear Congo Now? Cell Phones, Conflict Minerals, and the Worst Sexual Violence in the World" strategy paper in which Enough founder John Prendergast directly linked Western consumers' ownership of electronics like cell phones to sexual and other forms of violence in the eastern D.R. Congo.¹⁰ The paper laid out a strategy for engaging Western consumers on the Congo by pressuring electronics companies and government to avoid using minerals tied to conflict in consumer electronics. It formed the basis for Enough and other advocacy organizations' activities relating for the D.R. Congo from 2009 until today. It is important to understand that the shift to a focus on conflict minerals galvanized grassroots activists on Congo and built a broad constituency around the situation in the eastern Congo. The activists' use of consumer electronics, particularly mobile phones, as a means of tying consumers to the crisis in the Congo was effective in making grassroots activists feel as though they had a connection to the crisis and could make a difference. After the adoption of this strategy, advocacy groups proliferated, news coverage of the D.R. Congo increased dramatically, and donations poured in to organizations working on the region.

Enough also pursued coalition relationships with several leading corporations. The most responsive of these corporations was Hewlett Packard, which wished to be at the forefront of conflict minerals advocacy among multinational corporations.¹¹ Enough gave high marks to HP, Motorola, Intel, Nokia, Microsoft, and Dell in their November 2010 rankings of companies making progress on conflict minerals. It is safe to assume that most of those companies work closely with Enough on the issue as "Stakeholder Engagement" – defined

⁹ See, for example, "Averting the Nightmare Scenario." Enough Project Activist Brief (10 September 2007). Available: <http://www.enoughproject.org/publications/averting-nightmare-scenario-eastern-congo-activist-brief> and Rebecca Feeley and Colin Thomas-Jensen, "Getting Serious About Ending Conflict and Sexual Violence in Congo." Enough Project Strategy Paper (19 March 2008). Available: <http://www.enoughproject.org/publications/getting-serious-about-ending-conflict-and-sexual-violence-congo>.

¹⁰ John Prendergast, "Can You Hear Congo Now? Cell Phones, Conflict Minerals, and the Worst Sexual Violence in the World." Enough Project strategy paper (April 2009). Available: <http://www.enoughproject.org/publications/can-you-hear-congo-now-cell-phones-conflict-minerals-and-worst-sexual-violence-world>

¹¹ Hewlett Packard, *DRAFT (07/23/10) Conflict Minerals Advocacy and 90-Day Action Plan* (Internal document, 2010).

as working with an Enough-led coalition – is one of the indicators used to determine rankings.¹²

The Road to Dodd-Frank Section 1502

Enough and other activist groups working on D.R. Congo pursued a legislative strategy to pass a law that would require companies to be more transparent and accountable in their mineral sourcing practices. Their efforts centered on House Resolution 4128, the Conflict Minerals Trade Act, the purpose of which was to:

help stop the deadly conflict over minerals in eastern Congo by regulating the importation and trade of tin, tungsten and tantalum – minerals commonly used in cell phones, laptop computers and other popular electronic devices. Under the bill, U.S. Commerce Department-sanctioned auditors would audit mineral mines declaring them conflict free or not. These mines would be mapped to show which ones fund conflict. Furthermore, importers would have to certify whether they were importing conflict minerals – companies that do import conflict minerals will be reported to Congress by the United States Trade Representative.¹³

HR 4128 was submitted by Representative James McDermott, Democrat of Washington State, and supported by the Center for American Progress (Enough's parent organization), Human Rights Watch, Hewlett Packard, the International Labor Rights Forum, and the Information Technology Industry Council (ITIC, an industry lobby group). Despite gaining broad support from several sectors and getting co-sponsorship from other legislators after pressure from grassroots activists, the bill never moved out of the committees to which it was referred.

In July 2010, two provisions focusing on the D.R. Congo and conflict minerals were added to the Dodd-Frank Wall Street Reform and Consumer Protection Act. Section 1502 requires publicly trading companies to report to the Securities and Exchange Commission (SEC) and on their websites whether they source conflict minerals, defined as “columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives” from the D.R. Congo or its neighbors.¹⁴ It requires further reporting and auditing from companies that use D.R. Congo or neighboring country conflict minerals, and requires the SEC to create specific

¹² Enough Project, *Getting to Conflict Free: Assessing Corporate Action on Conflict Minerals*. (December 2010). Available: http://www.enoughproject.org/files/publications/corporate_action-1.pdf

¹³ OpenCongress Summary, *HR 4128: Conflict Minerals Trade Act*. Submitted to Congress 19 November 2009. Available: <http://www.opencongress.org/bill/111-h4128/show>

¹⁴ Resource Consulting Services has an excellent explanation of the full implications of section 1502. *US Legislation on Conflict Minerals: RCS Private Services Guidance on the Dodd-Frank Act Section 1502* (April 2011). Available: http://www.resourceglobal.co.uk/documents/RCS_DF_ACT_GUIDANCE_APRIL_2011_lowres.pdf

regulations as to how companies will satisfy the legislation's requirements.¹⁵ Section 1504 requires increased transparency from companies registered with the SEC to disclose how much they pay foreign governments for access to minerals, oil, and gas.¹⁶ Section 1504 has been less controversial with respect to the DRC, though there is certainly contention over the measure in other circles.^{17,18}

Consequences of Dodd-Frank

Section 1502, however, has provoked a great deal of controversy as a number of unintended consequences have developed since its passage. While the legislation gave the SEC 270 days to release rules on how companies are to report and audit their activities with respect to conflict minerals, meaning they should have been ready by April 2011, as of early January 2012, the regulations have yet to be released. The U.S. Chamber of Commerce and its member companies are threatening to sue over the legislation because they believe that the SEC has not "show[n] any benefits to investors, increased efficiencies for the marketplace or capital formation."¹⁹ In other words, the Chamber believes that the regulations impose too stiff a burden on commerce without demonstrating market-based reasons for doing so.

As a result of this controversy, the SEC held a roundtable on conflict minerals on October 18, 2011 in which corporations and advocacy community representatives were invited to participate. The meeting was somewhat contentious and featured a lively debate over the challenges corporations face in implementing section 1502's potential rules. Most of the corporations present at the roundtable asked the SEC to delay implementation of the rules due to the complexity and cost of implementation.²⁰ For example, a representative of Kraft Foods noted at the meeting that verifying responsible sourcing with over 100,000 suppliers

¹⁵ "The 'Conflict Minerals' Provision in the Dodd-Frank Act Imposes New Disclosure Requirements on Manufacturers." McDermott Newsletters (22 July 2010). Available: http://www.mwe.com/index.cfm/fuseaction/publications.nldetail/object_id/13114620-b2dd-466a-8392-c53c3da0a162.cfm

¹⁶ US PWYP Law 2010 – Sec. 1504 Dodd-Frank Wall Street Reform Act. Revenue Watch Institute. (July 2010) Available: <http://resources.revenuewatch.org/en/official-document/us-pwyp-law-2010-sec-1504-dodd-frank-wall-street-reform-act>

¹⁷ In particular, the petroleum industry. See Ben Gemen, "Oil Industry presses SEC to keep company payment data locked up." The Hill E2 Wire blog. (12 August 2011). Available: <http://thehill.com/blogs/e2-wire/e2-wire/176629-oil-industry-presses-sec-to-keep-company-payment-data-locked-up>

¹⁸ The relative lack of controversy over section 1504 with respect to D.R. Congo seems to have more to do with the overwhelming focus on 1502, which is where some in industry perceive a greater cost to disclosure. Also, D.R. Congo has relatively limited oil reserves, and many objections to 1504 thus far have come from the petroleum sector.

¹⁹ Sarah N. Lynch, "U.S. SEC to hold round-table on conflict minerals." Reuters. (29 September 2011). Available: <http://af.reuters.com/article/idAFS1E78S0R920110929?sp=true>

²⁰ Emily Chasan, "Companies Urge SEC to Slow Down on Conflict Mineral Rule." *Wall Street Journal* (18 October 2011). Available: <http://blogs.wsj.com/cfo/2011/10/18/companies-urge-sec-to-slow-down-on-conflict-mineral-rule/>

for every product the company produces will be an enormous challenge.²¹ When the SEC does release regulations for section 1502, it is unclear both what they will be and whether the Chamber will file suit against the rules, which most observers believe would result in section 1502 being thrown out by the courts. The Western advocacy community has responded to these challenges with an almost universally united argument that section 1502 should be immediately implemented, and a grassroots campaign against the Chamber's potential lawsuit is underway.

The primary industry lobby, the Information Technology Industry Council, argues that while it is committed to improving transparency and accountability in the Congolese mineral sector, ultimately, the solution to Congo's problems will not come from the private sector. Noted ITIC representative Rick Goss:

ITI members are committed to responsible sourcing practices and supported a federal disclosure requirement on minerals obtained from the DRC. Our companies have implemented a conflict-free smelter program and are working with global governments and civil society to jointly develop clean sourcing mechanisms to permit suppliers to remain economically engaged in the region.

Ultimately, however, this terrible conflict is rooted in the wholesale absence of basic governance, security and accountability in the DRC, which allows age-old ethnic tensions and conflicts over land rights to rage unabated. The DRC government and military are, at best, unable to protect their own citizens and, at worst, are reportedly complicit in committing atrocities against them. While the private sector has a clear role to play, only the steadfast and coordinated engagement of global governments can address these primary causes and finally resolve the conflict.²²

Some involved in this debate believe that section 1502 should be scrapped and replaced with better legislation. This may be unrealistic as getting Congressional attention on the issue a second time will be difficult if not impossible. Others argue that amending 1502 to allow more time to implement SEC regulations and to improve outcomes for Congolese miners would be a more viable solution.

Another problem is the cost of implementation. An independent Tulane University economic impact assessment study commissioned by U.S. Senator Dick Durbin found that the cost of implementing section 1502 will be approximately \$7.93 billion dollars – more than 100 times the SEC's estimated cost of \$71.2 million. The authors of the study note that the discrepancy arises from a problem with the SEC estimate:

²¹ Jesse Hamilton, "Kraft, GE Officials Say Conflict-Mineral Rule will Burden Firms." Bloomberg (18 October 2011). Available: <http://www.businessweek.com/news/2011-10-18/kraft-ge-officials-say-conflict-mineral-rule-will-burden-firms.html>

²² Email correspondence with author. 13 October 2011.

Our analysis shows that the published figure of \$71.2 million by the SEC underestimates the implementation cost, in part because it does not take into account the range of actors affected by the statutory law. In light of Section 1502, substantial traceability reforms would need to be implemented throughout the supply chain – from the mine to final product manufacturing – in order for disclosure to work.²³

Controversy in Washington is one thing. The effect of section 1502 on the Congolese is quite another. Although section 1502 has yet to be implemented, it has already had far-reaching consequences, none of which involve a reduction in violence. In September 2010, Congolese President Joseph Kabila instituted a ban on all mining in the Kivu and Maniema provinces. This ban largely shut down mining activity in the region, but it also led to increased militarization of the mining sector as the Congolese national army, the FARDC, took over many mines that had previously been non-militarized. While Kabila's reasons for implementing the ban are unknown, it is obvious that the ban would not have happened had section 1502 not become law. Mining in the Kivus is an activity from which many leading Congolese politicians financially benefit, as do members of the Congolese armed forces. Some in the advocacy community believe that Kabila instituted the six-month ban in order to make section 1502 fail, but this is an implausible claim in light of available evidence. Kabila faced a tight re-election battle in November 2011 and desperately needed the electoral support of communities most affected by his mining ban. The ban put miners out of work, which is not exactly a promising electoral strategy. The Congolese government claimed when they lifted the ban that it led to the disarmament of several militias.²⁴ It is likely that this, rather than a conspiracy to undermine section 1502, is what drove Kabila's decision. He saw a ban as a chance to persuade voters that he was engaging in constructive activities to improve the security situation in the east. Also, it is important to remember that access to eastern Congolese minerals is believed by most observers to be a key component in the rapprochement Kabila reached with Rwanda's President Paul Kagame in 2009 to end hostilities between their countries. Kabila's mining ban apparently allowed the FARDC to consolidate control over some previously non-militarized mines (eg, at Kamituga), which may have been another goal – ensuring that his troops, not others, had control over the mines before 1502's rules came into effect would be important if guaranteeing Rwanda access to Congolese minerals is part of maintaining the peace.

²³ The authors also reject a National Association of Manufacturers estimate of \$9-16 billion as being too high. Chris Bayer and Elke de Buir, Tulane University Law School Payson Center for International Development. *A Critical Analysis of the SEC and NAM Economic Impact Models and the Proposal of a 3rd Model in View of the Implementation of Section 1502 of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act*. (October 2011). Available: http://www.payson.tulane.edu/assets/files/3rd_Economic_Impact_Model_Conflict_Minerals.pdf

²⁴ "DR Congo lifts ban on mining gold, tin, and tungsten." BBC News. (10 March 2011). Available: <http://www.bbc.co.uk/news/world-africa-12700898>

Kabila's ban on mining ended in March 2011, but another *de facto* embargo of Congolese minerals soon took its place. As the April 2011 deadline for the implementation of section 1502 regulations approached, the Malaysia Smelting Corporation (MSC) began refusing to buy Congolese tin under pressure from industry watchdog group the Electronics Industry Citizenship Coalition (EICC). The EICC created a tracing scheme for smelters that requires corporations to show their ores to be conflict free, and most companies were to work through a tin industry group called ITRI to ensure their minerals were appropriately tagged as being conflict-free.²⁵ This tracing scheme went into effect on April 1, 2011. However, MSC could not guarantee that all of its minerals would be ITRI-tagged and so stopped purchasing minerals from D.R. Congo.²⁶ MSC had previously purchased up to 80% of eastern Congolese tin, so its exit from the market was devastating to local sellers.²⁷

The effect of MSC's decision to exit the D.R. Congo mineral trade means that there is now a *de facto* boycott on almost all Congolese tungsten, tantalum, and cassiterite. North Kivu exports of tin, which is derived from cassiterite, have fallen by 90%.²⁸ Only three of Goma's 25 exporters are operating, and they are selling minerals primarily to the Chinese. These purchases may be illegal under a 2010 UN resolution requiring UN member states to urge their corporations not to purchase minerals that might be financing violence in the region, but this resolution seems to have had little effect.²⁹

Section 1502's effect on Congolese artisanal miners and their families, however, has been devastating.³⁰ Congolese artisanal miners normally work under horrific conditions for little pay,³¹ but in most mining communities, it is the only paid employment available. There are no livelihoods alternatives, save subsistence agriculture or joining a militia. Now they are in

²⁵ "GeSI and EICC Announce Update to Conflict-Free Smelter Program." Press Release. (22 April 2011). Available:

<http://www.gesi.org/Media/GeSINewsFullStory/tabid/85/smld/503/ArticleID/75/refTab/37/t/GeSI%20and%20EICC%20Announce%20Update%20to%20Conflict-Free%20Smelter%20Program/Default.aspx>

²⁶ Jon Rosen, "Eastern Congo's Mining at Turning Point." *Global Post*. (4 April 2011). Available: <http://www.globalpost.com/dispatch/news/regions/africa/110325/eastern-congo-mining-gold>; Michael J. Kavanagh, "Congo Tin Sales Tumble 90% as Companies Avoid 'Conflict Minerals.'" *Bloomberg News*. (23 May 2011). Available: <http://www.bloomberg.com/news/2011-05-23/congo-tin-sales-tumble-90-percent-as-companies-avoid-conflict-minerals.html>.

²⁷ "Congo in talks with Malaysia Smelting over tin foundry." *Reuters*. (3 October 2011). Available: <http://af.reuters.com/article/investingNews/idAFJ0E7920KM20111003>

²⁸ Michael J. Kavanagh, "Congo Tin Sales Tumble 90% as Companies Avoid 'Conflict Minerals.'" *Bloomberg News*. (23 May 2011). Available: <http://www.bloomberg.com/news/2011-05-23/congo-tin-sales-tumble-90-percent-as-companies-avoid-conflict-minerals.html>

²⁹ Jonny Hogg, "U.S. Buyers Shun Conflict Minerals in Congo's East." *Reuters*. (4 October 2011). Available: <http://af.reuters.com/article/drcNews/idAFI5E7L31S720111005?sp=true>

³⁰ "Digging for Victory." *The Economist* (24 September 2011). Available: <http://www.economist.com/node/21530110> and David Aronson, "How Congress Devastated Congo." *New York Times* (7 August 2011). Available: <http://www.nytimes.com/2011/08/08/opinion/how-congress-devastated-congo.html>

³¹ Free the Slaves, *The Congo Report: Slavery in Conflict Minerals* (June 2011). Available: <http://www.freetheslaves.net/Document.Doc?id=243>

trouble; as the World Bank PROMINES head Paul Yenga Mabolia told *Bloomberg Businessweek*, “Almost everything came to a standstill.”³²

Local civil society activists engaged in the mining sector estimate that 1-2 million Congolese artisanal miners and those who work in other aspects of the mining sector are currently out of work. Multiplied by the 5-6 direct dependents that each miner has, section 1502 has inadvertently and directly negatively affected up to 5-12 million Congolese civilians.³³ Many miners cannot feed their children, their children are not in school this year because they cannot pay tuition fees, and those who are ill cannot afford medical treatment.³⁴ Many other miners have shifted to work in the gold sector, where smuggling is easy and sales continue.³⁵

That miners are out of work reverberates through the entire eastern Congolese economy. This situation was anticipated by Congolese civil society leaders and has been just as devastating as they feared.³⁶ When miners lack earnings, not only can they not pay their children’s school fees or afford to visit health care professionals, but they do not have money to pay for other goods and services in the local markets, meaning that shopkeepers, hairdressers, seamstresses, and market sellers are also earning significantly less. In many mining areas, economies were based partly on minerals rather than cash; it was possible to buy goods and services by trading a teaspoon of coltan for, say, school tuition. In addition, planes that flew into remote mining areas like Shabunda and Walikale are no longer coming to take the minerals out. Those planes carried in basic necessities like petroleum, salt, and candles to places that are not accessible by road. Today, those communities must do without such necessities; even if one has money to purchase the goods, they are no longer available.

The impact on mining sector livelihoods, while unintended, is a disaster for the already-fragile economy of the eastern D.R. Congo. Miners cannot provide for their families by returning to subsistence agriculture. Policy makers must consider the real and immediate – albeit unintended – impact their actions have had on artisanal mining communities. The potential for a humanitarian crisis is real; USAID and many non-governmental organizations are engaged in assessments in the region to determine how best to aid these miners.

³² Mark Drajem, Jesse Hamilton, and Michael Kavanagh, “A Rule Aimed at Warlords Upends African Mines,” *Bloomberg Businessweek* (4 August 2011). Available: <http://www.businessweek.com/magazine/a-rule-aimed-at-warlords-upends-african-mines-08042011.html>

³³ As with most data in the D.R. Congo, these numbers are extremely difficult to verify; however, the numbers listed here are estimates made by reliable civil society actors with long experience in the D.R. Congo mineral sector. There are no polls or surveys showing more reliable figures on how many miners are out-of-work as a result of the *de facto* ban.

³⁴ Summary of not-for-attribution discussions at the Great Lakes Policy Forum. Washington, DC (October 2011).

³⁵ United Nations. *Final Report of the UN Group of Experts on the Democratic Republic of Congo* (2011). Available: http://www.un.org/qa/search/view_doc.asp?symbol=S/2011/738

³⁶ Letter from South Kivu miners’ cooperative GEKOMINSKI to Intel included in SEC comments. (8 April 2011). Available: <http://www.sec.gov/comments/s7-40-10/s74010-219.pdf>

Advocates anticipated that artisanal miners would be put out of work by legislation targeting Congolese conflict minerals. HR 4128 contained provisions to provide assistance to mining communities. However, section 1502 provides no such assistance. Advocates have called for legislation to support miner livelihoods, but there is little money available for these programs.³⁷ In any case, a fund to support miners is not a sustainable solution for their employment problems. Even if \$20 million were available to support miners, such funding is grossly inadequate to help communities faced with the need to rebuild their local economies from scratch. If they are unable to work soon, the suffering of artisanal miners and their families will be compounded.

The real tragedy of this situation is that while 1502 has inadvertently put entire Congolese communities out of work, they still live under the constant threat of violence and intimidation. There has been no reduction in violence in the Kivu provinces as a result of the government-imposed or the international *de facto* bans. Armed groups continue to terrorize local populations and to prey upon communities for food, money, and other resources. Moreover, as the 2011 Final Report of the UN Group of Experts on Congo notes, the *de facto* ban has led to an increase in conflict mineral smuggling via Rwanda and pushed Congolese armed groups to seek alternate sources of revenue, including the timber trade, and, in the case of the FDLR, continuing involvement in trading cannabis and palm oil.³⁸ Section 1502 has – albeit unintentionally – thus far caused more problems than it has solved.

What went wrong? Advocacy misperceptions & the D.R. Congo conflict

Advocates correctly argue that section 1502 has yet to be implemented, and many seem to believe that this absolves them of responsibility for the consequences described above. This is a disingenuous argument. Neither Kabila's ban or the MSC's decision to stop buying Congolese minerals would have happened had Dodd-Frank not become law. Both the

³⁷ An October 2011 Enough paper claims that USAID announced a \$20 million program for miner livelihoods in August 2011 (Aaron Hall and Sasha Lezhnev, *U.S. Congo Policy: Matching Deeds to Words to End the World's Deadliest War*. Enough Project. (October 2011). Available: <http://www.enoughproject.org/files/US-Congo-Policy.pdf>). According to a source at USAID, the Community Recovery and Livelihoods Project was developed prior to the passage of the Dodd-Frank Act. Enough's claim is a mischaracterization of its purpose. However, this does not mean that proposals cannot focus on mining communities, but rather that the program is not in response to Dodd-Frank.

A reading of the program summary shows that the money is intended to assist with livelihoods opportunities for Congolese victims of violence and others in order to alleviate the causes of war. See USAID, "Community Recovery and Livelihoods Project." Grants.gov. (Announcement date: 15 August 2011). Available: <http://www.grants.gov/search/search.do?sessionId=Gkk9TL4G0MhkkYsiyyXL6QcZiQMTPq8092GribTh00vMJXC2p1q747832409?oppId=114513&mode=VIEW>

³⁸ United Nations. *Final Report of the UN Group of Experts on the Democratic Republic of Congo* (2011). Available: http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/738

timing of the actual and *de facto* bans and all rhetoric surrounding them suggests that these were clear responses to the perceived future effects of the legislation. MSC and other international buyers are not purchasing Congolese minerals due to uncertainty about the SEC regulations on Section 1502.³⁹ That the consequences were unintentional and unanticipated does not mean they were not direct effects of 1502's passage.

While the U.S.-based advocacy community working on D.R. Congo has good intentions with regards to wanting to improve the quality of life for the Congolese, most advocates made several key mistakes in their analysis of the situation. These mistakes were based on misperceptions – most notably about the relationship between mineral exploitation and conflict in the Congo, the drivers of Congolese armed group behavior, and the feasibility of running effective traceability schemes in a failed state. What did the advocates get wrong?

Minerals don't *cause* conflict in Congo

Efforts to pass legislation on conflict minerals in the D.R. Congo were based on the mistaken assumption that because the mineral trade is one dynamic in some of the region's conflicts, this means that minerals cause conflict. This underlying belief can be seen in a number of early advocacy efforts such as Enough's April 2009 strategy paper, "Can You Hear Congo Now?" As criticism of this claim mounted, advocates moderated their language to refer to conflict minerals as a "key driver" of conflict in the eastern D.R. Congo. However, this claim is also misleading. If minerals cause or drive conflict in a failed state, then we would expect to see most, if not all, of the Congolese mineral trade to be militarized and/or the object of competition between armed groups. This is far from true, however. The mines of Kasai and central Katanga are completely free of violence, as are many mines in the heart of the conflict regions in North and South Kivu and Ituri.⁴⁰ Another dynamic is at work in the Kivus, and it has very little to do with the mineral trade, but is instead about the state's weakness and local disputes over land and citizenship rights. As analyst Jason Stearns told AlertNet, "There is no doubt that minerals constitute a large part of the conflict economy in the eastern Congo and dealing with the conflict minerals issue is important, ... But minerals were not the origin of the conflict in Congo and solving the conflict minerals issue is not going to bring an end to the conflicts."⁴¹ The militarized mineral trade is much more a symptom of the Congolese state's weakness and inability to govern than it is its cause.

³⁹ Jonny Hogg and Graham Holliday, "Conflict minerals crackdown backfiring in Congo," Reuters (30 December 2011). Available: <http://af.reuters.com/article/drcNews/idAFL6E7NU25720111230?sp=true>

⁴⁰ One particularly egregious example of misleading claims about the Congolese mineral sector came in a segment of CBS's *60 Minutes*, in which John Prendergast and CBS correspondent Scott Pelley traveled to Ituri's Chudja gold mine for a 2009 segment. Ituri gold mines have been at peace since 2006, but the Chudja mine was presented in the segment as a place in which violence against civilians was actively occurring. See Scott Pelley, "Congo's Gold," *60 Minutes* (29 November 2009). Available: <http://www.cbsnews.com/video/watch/?id=5825990n>

⁴¹ George Fominayen, "Mineral certification? The path to end Congo's violence?" AlertNet. (6 May 2011). Available: <http://m.trust.org/alertnet/news/mineral-certification-the-path-to-end-congos-violence/>

Armed groups don't fight *because* they have access to mineral wealth

The logic behind focusing on the mineral trade as a way to slow violence in the eastern D.R. Congo is as follows:

1. Armed groups maintain control of mines so that they can earn money to fuel their activities.
2. If international and local actors cut off armed groups' access to mineral wealth by implementing traceability schemes and responsible sourcing mechanisms, armed groups will no longer be able to earn as much money.
3. Therefore, the ability of armed groups to fight and/or terrorize Congolese civilians will be diminished.

While this logic sounds good on paper, it is based on a misperception of what motivates Congolese armed groups and what they do with the money they earn from the mines. First, there is little reason to believe that Congolese armed groups use the bulk of the money they earn from the mineral trade to buy weapons and ammunition. The eastern D.R. Congo is saturated with weapons; few soldiers need to buy new ones, and those that are for sale are extremely inexpensive and readily available in local markets.⁴²

Instead, most of the money earned by armed groups from the mineral trade is used to pay salaries, buy food, and provide other basic necessities to fighters and their families. This is particularly true in the FARDC, where government salaries are rarely paid and when soldiers do receive money, it is often only a partial salary. Even if soldiers are paid their salary, the amount (approximately \$40-50/month) is far below what is needed to provide for their families. Thus they look to earn revenue via the mineral trade.

Second, even if armed groups do depend on the mineral trade to finance their activities, most can draw upon other reliable sources of revenue. As Vlassenroot and Adam have shown, Congolese civilians face an enormous burden from informal taxation schemes, many of which are carried out by armed groups.⁴³ Reliance on the mineral trade varies widely among Congolese armed groups, with the FDLR earning as much as 75% of its revenue from the mineral trade (mostly from gold), while others like the CNDP earn significantly

⁴² Author's observations, 2005-07, 2010. A Small Arms Survey report on the illicit weapons trade between southern Sudan and northeastern Congo made clear just how many small arms are in the region. The Small Arms Survey researcher set out to explore the scale of illicit arms trading between the two regions, but found that weapons flows there are limited because civilians in northeast Congo do not perceive a need for arms, the Congolese army rigorously disarms civilians, and southern Sudan was already saturated with arms. See Joshua Marks, *Border in Name Only: Arms Trafficking and Armed Groups at the DRC-Sudan Border*. (Geneva: Small Arms Survey, 2007). Available: <http://www.smallarmssurveysudan.org/pdfs/HSBA-SWP.4-DRC-Sudan.pdf>

⁴³ Jeroen Adam and Koen Vlassenroot, "La Fiscalité de Poche": The politics of taxation in Eastern DR Congo." Conference Paper. Presented at the annual meeting of the African Studies Association (November 2010).

less.⁴⁴ In addition to the mineral trade, Congolese armed groups rely on taxation of citizens under their control, of revenues collected at roadblocks, and on trade in other commodities like charcoal, timber, and bananas. As access to mineral wealth has been limited, Congolese armed groups have turned to other forms of revenue extraction with little effect on their violent behavior.

Third, most Congolese armed groups are not motivated to fight by the mineral trade or for access to the mines; instead, their violent behavior stems from anger over inequality, ideological issues, and/or because there are no constraints on such activities in the eastern D.R. Congo. As Séverine Autesserre notes, despite the international community's overwhelming focus on conflict minerals, only about 8% of Congolese conflicts are over natural resources.⁴⁵ Some groups, including many of the Mai Mai militias, fight simply because they can. Others have specific grievances about their ethnic groups' position in society or, in the case of the FDLR, about the Rwandan political leadership. With regard to none of the armed groups of eastern Congo is there any evidence that they will stop fighting simply because they lose a key source of revenue. The loss of revenue is not likely to affect their ability to procure weapons and ammunition, nor is it likely to motivate them to negotiate for peace. Instead, they are likely to prey on civilians to an even greater extent than before the *de facto* mining boycott went into effect.

Traceability is very challenging in a fragile state

The idea of ensuring that Congolese conflict-free minerals can make it to market is an attractive one. Unfortunately, it is based on a poor understanding of how trade and governance works in an extremely weak state. The idea for implementing a traceability scheme with respect to the D.R. Congo was based on the Kimberley Process for ensuring that diamonds sold on international markets would be conflict free. However, advocates failed to take into account that the Kimberley Process only works well in relatively strong states with functioning governing institutions.

The situation in the eastern D.R. Congo could not be further from the norm. It is not an exaggeration to say that it is possible to bribe almost every border guard, customs official, and immigration authority in the region. These officials are not paid regular salaries and are dependent on money they can raise through bribery and the imposition of made-up fees to provide for their livelihoods. This makes smuggling very easy; indeed, it is obvious that a

⁴⁴ Nicholas Garrett and Harrison Mitchell, *Trading Conflict for Development: Utilising the Trade in Minerals from Eastern DR Congo for Development* (April 2009). Available: <http://www.resourceglobal.co.uk/documents/Trading%20Conflict%20for%20Development.pdf>, 6. For more detailed descriptions of the dynamics of the mineral trade in the eastern Congo, see Harrison Mitchell and Nicholas Garrett, *Beyond Conflict: Reconfiguring Approaches to the Regional Trade in Minerals from Eastern DRC. Communities and Small-Scale Mining* (1 September 2009). Available: http://www.resourceglobal.co.uk/documents/Beyond%20Conflict_RCS_CASM.pdf

⁴⁵ Séverine Autesserre, "Dangerous Tales: Dominant Narratives on the Congo and their Unintended Consequences." *African Affairs* (Forthcoming 2012), p. 8.

great deal of smuggling is happening even as the *de facto* boycott continues. Border officials intercepted a load of cassiterite in a MONUSCO vehicle in August, but it is likely that the ton they caught there is but a small fraction of what is being smuggled out.⁴⁶ Smuggling has greatly increased since the *de facto* boycott went into effect, and it seems likely to continue into the future regardless of whether the SEC adopts rules or not.⁴⁷

It is very difficult to see how any traceability scheme could overcome this situation, for it is not only officials at the borders who will take bribes, but also those at airports and at the mines themselves. An effective traceability scheme would have to involve implementation and monitoring at every step of the process, including transport, by disinterested outside observers who cannot be bought. But even this may be problematic as anyone familiar with the Congolese spirit of innovation and entrepreneurial ingenuity expects that smugglers will find a way to fake certification before too long. Without effective oversight from functioning government institutions, it is unlikely that even the most carefully planned traceability scheme will effectively prevent conflict minerals from being sold on international markets.

Traceability schemes were already being developed prior to section 1502's passage

Many who supported Dodd-Frank section 1502 made it sound as though it would be the first traceability scheme to address the problems in the Congolese mining sector. This is simply untrue. A number of efforts were underway, and many of these were undertaken in consultation with local civil society leaders and Congolese mineral trade exports. In particular, an effort called PROMINES involving the Congolese government, the World Bank, and industry had made great strides towards improving transparency and accountability. This effort was out of the public eye and intentionally low-key and had great potential for success. However, it and other ongoing efforts (most notably the International Conference for the Great Lakes Region's RINR framework⁴⁸) to improve the sector have largely ignored and/or confused with the mess surrounding section 1502. Currently, the ICGLR, the ITRI, the OECD, and the SEC are all pursuing traceability regulations and schemes, sometimes in consultation with one another and sometimes without doing so. Other schemes include MONUSCO's creation of trading centers, an EITI scheme, and the German government's BGR program. The problem is compounded in that traceability is possible with some commodities (eg, diamonds), but extraordinarily difficult with others

⁴⁶ "DR Congo tin 'smuggled by UN man.'" BBC (23 August 2011). Available: <http://www.bbc.co.uk/news/world-africa-14629354>

⁴⁷ United Nations. *Final Report of the UN Group of Experts on the Democratic Republic of Congo* (2011). Available: http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/738

⁴⁸ "Natural Resources." ICGLR website. Available: <https://icglr.org/spip.php?article94>

(namely, gold). In short, there is a great deal of confusion surrounding the issue and a desperate need for more collaboration.⁴⁹

Regional stability and the mineral trade

The mineral trade in the Congo is a regional issue, not simply a local one.⁵⁰ Violence has substantially decreased in the Kivu provinces since early 2009. While the situation in the region is still very volatile in places, the overall situation is vastly improved from what it was during the transition period and in the first years after the 2006 elections. A major reason for this stability is the rapprochement between Congolese President Joseph Kabila and Rwandan President Paul Kagame. In late 2008 and early 2009, CNDP troops (widely believed to be financially backed by the government of Rwanda) were on the brink of taking control of Goma, which could not be held by the limited number of MONUC peacekeepers posted there. However, Rwanda stopped the CNDP, arrested its leader Laurent Nkunda, and within months, Kabila and Kagame reached an agreement. This agreement was negotiated by former Nigerian President Olusegun Obasanjo, acting on behalf of the United Nations. It is an oral agreement and its specific contents are only fully known to the two heads of state. Most observers believe that the agreement contained some kind of provision that guaranteed Rwanda access to Congolese minerals, an important source of revenue for Rwanda.

Rwanda has been careful to voice its support for mineral tracing schemes in the D.R. Congo and recently announced its intention to return 70 tons of smuggled, untagged minerals to the Congolese.⁵¹ However, it is unclear whether Rwanda has been rejecting all smuggled minerals from the D.R. Congo. Rwanda has very limited mineral reserves in its own territory; most minerals sold on world markets as “Rwandan” are actually Congolese.

Rwanda is very careful to maintain its public image as an international good citizen and so the government is unlikely to protest the implementation of section 1502 or other legislation. However, it is important that Rwanda be able to maintain access to Congolese minerals in the interest of regional stability. It does not seem feasible that Rwanda would re-invade Congo to gain access to minerals, but it is within the realm of possibility that Rwanda would turn to secretly back a local militia if it felt its economic interests would be best served by doing so.

Why did advocates fall prey to these misperceptions? While it is impossible to know for certain, it is clear that many of those who conceived the strategy for dealing with conflict minerals either had direct experience working to put together the Kimberley Process or were

⁴⁹ For a comprehensive list of traceability scheme efforts, see *Conflict Minerals and the Democratic Republic of Congo: Responsible Action in Supply Chains, Government Engagement and Capacity Building*. BSR (May 2010).

⁵⁰ Jeroen Cuvelier, “Introduction” in Jeroen Cuvelier, ed., *The Complexity of Resource Governance in a Context of State Fragility: the Case of Eastern DRC*. International Alert (2010), 9.

⁵¹ “Rwanda: Country to Send Minerals Back to DRC.” *The New Times* (13 October 2011). Available: <http://allafrica.com/stories/201110130016.html>.

inspired by its efforts. This is particularly true with respect to advocates from British organization Global Witness, which focuses on minerals in conflict and played a major role in developing the Kimberley Process.

The Enough Project took matters a step further as they repeatedly cited the efforts leading to the creation of Kimberley Process as instrumental in ending conflicts in countries that house significant diamond reserves.⁵² For example, Enough's John Prendergast and Aaron Hall argued in a February 2011 op-ed that, "The global blood diamonds movement helped to end these wars, and the resulting Kimberley Process, although far from perfect, has helped to consolidate peace in those areas, playing a significant role in ending conflict in Sierra Leone, Liberia, and Angola."⁵³

It is true that the Kimberley Process was created largely in response to the conflicts in Sierra Leone, Liberia, and Angola, where the sale of "blood diamonds" were a major revenue source for the countries' armed factions. However, it is empirically false to say that the Sierra Leonean, Liberian, and Angolan wars ended due to the Kimberley Process and its potential effect on mineral revenue for armed groups. The Sierra Leone conflict ended after a stalemate developed between the RUF and government forces.⁵⁴ As J. Peter Pham notes, "the brutal tactics employed by the rebels as well as their lack of a coherent political program other than to overthrow the national government in Freetown rendered it difficult for them to rally Sierra Leoneans to their cause." Peace was restored in 2001-02 through a security-restoration process in which the UN peacekeeping mission UNAMSIL's force strength grew to 17,500 and was mandated to support government efforts to disarm combatants and restore order.⁵⁵

Likewise, the Angola conflict ended not because the Kimberley Process cut off revenues to rebel fighters, but rather because UNITA rebel leader Jonas Savimbi was killed in combat in 2002 and his successors agreed to a ceasefire less than two months later. The ceasefire led to

⁵² See, for example, John Prendergast, "60 Minutes Spotlights Gold, Conflict Minerals Fueling Congo's War." Enough Project blog post (30 November 2009). Available: <http://www.enoughproject.org/blogs/60-minutes-spotlights-gold-conflict-minerals-fueling-congos-war>; John Prendergast, "Can You Hear Congo Now? Cell Phones, Conflict Minerals, and the Worst Sexual Violence in the World." Enough Project strategy paper (April 2009). Available: <http://www.enoughproject.org/publications/can-you-hear-congo-now-cell-phones-conflict-minerals-and-worst-sexual-violence-world>; Raise Hope for Congo: An Enough Campaign, "Conflict Free Campus Initiative Toolkit." Available: <http://www.raisehopeforcongo.org/sites/default/files/Enough%20Conflict-Free%20Campus%20Toolkit.pdf>.

⁵³ John Prendergast and Aaron Hall, "Certifying Congo's Deadly Conflict Minerals." Enough Project (1 February 2011). Available: <http://www.enoughproject.org/blogs/certifying-congos-deadly-conflict-minerals>

⁵⁴ A contentious scholarly debate exists over whether the RUF were motivated to fight by the presence of diamonds or whether the war was fought mainly over agrarian grievances. Evidence for both claims is inconclusive, but recent findings suggest that agrarian grievances were a key driver of conflict in the Sierra Leone war. See Esther Mokuwa, Maarten Voors, Erwin Bulte, and Paul Richards, "Peasant Grievance and Insurgency in Sierra Leone: Judicial serfdom as a driver of conflict." *African Affairs* 110:440 (May 2011), 339-366.

⁵⁵ J. Peter Pham, "Democracy by Force? Lessons from the Restoration of the State in Sierra Leone." *The Whitehead Journal of Diplomacy and International Relations* 129:6 (Winter/Spring 2005), 129-147.

a political process by which UNITA soldiers disarmed and the movement became a political party.⁵⁶ In Liberia, the country's second civil war ended in 2003 because the LURD rebel movement attained a series of battlefield victories over Charles Taylor, the primary beneficiary of the Sierra Leonean diamond trade, and declared a ceasefire in the face of international diplomatic pressure that led Taylor to resign.

With the exception of Liberia, none of the wars cited by advocates as support for the idea that creating a mineral supply chain traceability scheme will reduce conflict had ended by the time the Kimberley Process came into effect. There is no evidence that suggests fighters in any of these conflicts were primarily – or at all – motivated to lay down their arms due to the fear that they might lose sources of revenue from the diamond trade. Instead, decisive battlefield victories, external pressure, and negotiated political solutions were what ended each conflict.

Creating an International Norm

That the Kimberley Process did not end the wars in Sierra Leone or Angola is not in and of itself a reason not to pursue traceability schemes and responsible sourcing for other mineral resources in conflict areas. If implemented well, they can theoretically build more accountable and transparent economies in countries that need them. For some advocates who supported Dodd-Frank sections 1502 and 1504, the creation of such an international norm is by far the most important aspect of the legislation, arguably more so than whether the law will lead to greater peace and stability in the eastern Congo. These advocates see the potential failure of the law as disastrous for their goal of building international norms to hold corporations responsible for where and how they source materials for their products.

While there is no question that all D.R. Congo stakeholders want to see less violence and more peace and prosperity in the conflict regions, the overarching focus on the creation of a norm with respect to conflict minerals is problematic. Advocates used the horrific nature of the violence in the D.R. Congo to draw attention to the crisis and leveraged emotional language, images, and testimony about rape in the Congo to promote the need for legislation on conflict minerals while promising that the violence would abate if the legislation were passed. However, many overstated the potential that a traceability and transparency scheme would have for alleviating some of that violence. Meanwhile, the unintended effects of the passage of section 1502 have put millions of Congolese artisanal miners out of work, and the violence has not abated despite the fact that few armed groups are making money from the nearly-halted mineral trade. Many policy makers and legislators feel as though they have been deceived as to what consequences – positive and negative – section 1502 would produce, particularly with respect to preventing civilian-directed violence.

⁵⁶ Polity IV Project, *Polity IV Country Report 2008: Angola* (2008). Available: <http://www.systemicpeace.org/polity/Angola2008.pdf>, p. 3.

As noted above, the notion that governments and consumers should hold corporations accountable for responsibly sourcing materials and labor used to build their products should not be controversial. Many consumers have shown that they prefer to pay higher prices for fair trade and ethically-produced goods. However, we need to decouple the value of creating a norm about supply chain tracing from the notion that doing so will end violence against Congolese civilians. There is no evidence that supply chain tracing schemes end conflict or prevent violence, and however Dodd-Frank section 1502 is implemented, it is unlikely that this law will do so in the D.R. Congo. Violence in the Congo is rooted in political disputes and requires a political solution, not an economic one. Stakeholders could have a more productive and honest debate by delinking these issues and focusing on finding appropriate solutions to distinct problems.

Recommendations

What can be done to improve the plight of Congolese artisanal miners while simultaneously promoting a more transparent and legitimate mining sector? The following recommendations seek to address the problem by slowing down the implementation process, focusing on miner livelihoods, and incorporating local solutions.

1. Implement Dodd-Frank section 1502 in phases with clear annual benchmarks over three years.

The U.S. advocacy community strongly believes that section 1502 should be immediately implemented and that the SEC should issue rules on the Congo mining sector without further delay.⁵⁷ Enough has created a Step Up for 1502 campaign through which its grassroots activists are pressuring the U.S. Chamber of Commerce to back down from their plans for a lawsuit and through which they are urging the SEC to act immediately.⁵⁸

Congolese civil society leaders and mining sector officials, however, believe that by slowing down the implementation of section 1502 it will be possible to integrate the many existing schemes for improving transparency and accountability in the Congo mining sector. They are correct; as the SEC regulations are one set among many, the differences in traceability schemes has produced mass confusion while creating no as-yet-viable process for tagging and tracing Congolese minerals. By slowing the timeline on implementation of the SEC rules and allowing for a three year transitional period, more time will be available for a consultative process that integrates the interests of Congolese miners along with industry and advocacy interests. It also makes the success of a traceability scheme more likely; with buy-in from local actors, the likelihood of smuggling will significantly decrease.

⁵⁷ Email to Chair and Commissioners of the Securities and Exchange Commission from 12 advocacy organizations. Provided to author. (29 July 2011).

⁵⁸ Kathryn Havranek, "Step Up for 1502 and Congo." Enough Project blog. (11 October 2011). Available: <http://www.enoughproject.org/blogs/step-1502-and-congo>

The SEC should develop a series of clear benchmarks for each year of the transitional implementation process for section 1502. It is unrealistic to assume that effective and transparent traceability schemes can be implemented in D.R. Congo overnight. Benchmarks should be progressively stronger and should be realistic. They should also take into account local civil society actors' views on what is and is not feasible, and should be centered on building community consensus about the regulations and the need for a traceability scheme. Furthermore, the goals should work to integrate and unite the many existing traceability schemes into one workable system. Goals for the first year should be primarily focused on public education and the creation of basic infrastructure for the system. Over the second and third years, rules should require progressively higher standards for conflict-free purchases. The SEC should reasonably expect that companies can report that about 25% of their mineral exports from D.R. Congo are conflict-free at the end of year one, with that number rising to 50% by the end of year two and 100% by the end of year three. Regulations regarding reporting and auditing of non-conflict-free minerals should not fully go into effect until after the end of the third year.

2. Provide immediate assistance to affected mining communities.

Congolese miners affected by the *de facto* ban on mineral exports need immediate, short-term assistance for basic necessities, school fees, and health care. This assistance need not be terribly costly; allocating approximately \$50-\$150 per family dependent on family size would help to alleviate their most pressing problems. Foremost among these concerns are the ability to purchase food and to pay school fees. For basic needs, families need food aid. However, given that section 1502 has shut down much of the economy in mining regions, aid agencies should consider disbursing aid in the form of direct cash transfers to affected families. This would allow them to buy food from local providers, thereby helping the Kivutian economy to recover. Assistance should also be provided to the already-stretched health care system. If miners are not given direct cash transfers to pay for health care on their own, then donors and aid agencies should temporarily subsidize the full cost of health care. Out-of-pocket health care expenses in the region range from about \$1 to \$5 for most visits and overnight hospital stays, so the cost of temporarily fully subsidizing health care would not be extraordinarily high.

The Congolese school year operates on a trimester system and began in early September, but most miners were unable to pay their children's tuition, which ranges from \$5/trimester for primary school to \$15-30/trimester for secondary school. Aid agencies normally do not pay school fees, but in this case, an exception should be made. Payments for miners' children's tuition should be made directly to education providers, which in most cases are religious institutions managing the public schools on behalf of the state. Doing so would allow school officials to pay teachers' and administrator's salaries, thereby further helping to jumpstart the local economy and support those who are indirectly affected by the *de facto* embargo.

3. Turn traceability into a jobs program.

There is a small chance that delaying the implementation of section 1502 would allow Congolese artisanal miners to get back to work while traceability schemes are developed in a more collaborative process. Industry watchdog groups and industrial coalitions should consider allowing corporations to buy Congolese minerals while meeting yearly benchmarks to show improvement. This would help the people of the eastern Congo immeasurably while still showing a commitment to transparency and accountability in the mineral sector. As benchmarks are achieved over time, it could also create better working conditions and improve quality of life for miners.

However, the professionalization of the mining sector is likely to put many artisanal miners out of work, and it is not clear that industry watchdogs would allow companies to buy Congolese minerals under transitional conditions. The traceability scheme that is ultimately developed should include job creation efforts as part of its structure; there is no reason that former miners should not be hired as taggers or hold other positions to ensure that minerals are certified as conflict-free.

The international community should increase its emphasis on job creation schemes in the Congolese mining regions as well by implementing microcredit programs, investing in rebuilding infrastructure, and through other job-creation efforts. Mining jobs should be one economic opportunity among many.

4. Create formal mechanisms for Congolese leadership in the implementation process.

A major problem with U.S.-based advocacy efforts on the Congo is that their major strategy was conceived in Washington with little to no reference to Congolese actors and their concerns. Local actors that were drawn into the process in its later stages tended to be hand-picked supporters of the process, while dissenting voices were left out. As it stands now, many Congolese experts on the mining sector are marginalized in the debate and have little incentive to work with advocates and policy makers who previously ignored them. Many of the problems with section 1502 and its unintended consequences were anticipated by Congolese civil society leaders and scholars and could have been avoided had their perspectives been integrated in the advocacy process before strategies were released and advocacy activities had already been determined. Allowing Congolese leaders to have a formal role in the implementation process, as well as listening to local leaders on what needs to be done to combat regional violence will increase buy-in for traceability schemes, thus contributing to a decline in smuggling and public support for the new rules.

Any such mechanism should include a wide spectrum of Congolese civil society actors, not just those known to support 1502 or those selected only by Western advocacy coalitions.⁵⁹ Doing so will ensure that effective compromises reflecting the reality of state fragility and the practicality of implementation schemes on the ground in eastern D.R. Congo.

5. Focus on security sector reform as a distinct issue.

The D.R. Congo advocacy community has increased its focus on security sector reform in recent months.⁶⁰ This is a welcome development and one that should continue. As the militarized mineral trade in D.R. Congo is a symptom rather than a cause of violence, policy makers, advocates, and commentators should make an effort to discuss security sector reform as a distinct issue from the mineral trade. Improving transparency and accountability in the mineral trade should be understood as an economic solution to an economic problem. Doing so will help to clarify solutions in the mineral sector – particularly with respect to what to do about the gold trade⁶¹ – while allowing for a more clearheaded discussion of the difficult tasks that lie ahead. These tasks include training and professionalizing the FARDC, restoring territorial authority, and disarming rebel factions. The U.S. government should expand its efforts via AFRICOM, particularly with respect to FARDC training and professionalization programs.

Conclusion

While the debate over Dodd-Frank section 1502 is contentious, all stakeholders share the goal of improving the quality of life and security situation of the Congolese people, particularly miners and their families. With this common basis of concern, stakeholders can and must find ways to work together to implement traceability and accountability schemes. However, these schemes must be realistic and based on a factual understanding of how the mineral trade in eastern Congo actually works as well as the limits imposed by an extremely weak state and the ease of smuggling under such conditions. In particular, advocates and legislators must understand that cleaning up the mineral trade in eastern Congo – while necessary and important – is unlikely to alleviate violence there. Only political solutions and

⁵⁹ One useful resource for finding such leaders is the excellent USAID/Eastern Congo Initiative *Landscape Analysis of Community-Based Organizations* (May 2011), which provides information on the activities of 292 community-based organizations in 63 locations in four eastern Congolese provinces.

⁶⁰ See, for example, Aaron Hall and Sasha Lezhnev, *U.S. Congo Policy: Matching Deeds to Words to End the World's Deadliest War*. Enough Project. (October 2011). Available: <http://www.enoughproject.org/files/US-Congo-Policy.pdf>

⁶¹ The gold trade is a key source of revenue for some Congolese armed groups, particularly the FDLR. Traceability schemes for gold are currently virtually impossible to implement due to technical issues. It is beyond the scope of this report to cover in detail what would need to happen to get the gold trade under control, but, as with the rest of Congo's mineral sector, doing so will require political solutions rather than economic ones. For more information on the Congolese gold sector, see Jeroen Cuvelier, ed. *The Complexity of Resource Governance in a Context of State Fragility: the Case of Eastern DRC*. International Alert (November 2011). Available: <http://www.cgmontinstitute.be/papers/11/afr/201011ResourceGovEasternDRC.pdf>

a strong commitment to security sector reform will produce a lasting peace that enables the Congolese to benefit from their country's rich natural resources.

It is not too late to correct some of the unintended consequences of Dodd-Frank section 1502. By slowing the implementation process and allowing Congolese civil society voices to lead, the SEC can allow time to develop more realistic and feasible solutions to the problem. At the international level, the OECD and other groups developing similar regulations can learn from the mistakes of 1502 while pushing for political solutions to D.R. Congo's political violence.

